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MEMOIR

M. FRANCOIS PERON.

Mamoir of M. Peron, Correspondent de l'Institute,

• Membre de la Societé de Medicine, &c. &c.

In the following Memoir, we invite attention to a brief sketch of the eventful life of the illustrious Peron, whose course was alike short and brilliant. In early life, disabled from further service in that bloody field, misnamed the field of glory, for which by, nature he was peculiarly fitted, but where he witnessed much that almost broke his heart, he betook himself to the study of Natural History, and, after a period of ardent application, he spent several most busy years in the dreary regions of the Antarctic Seas—there working as Naturalist had never worked before. He then returned to Paris, loaded with the spoils of his successful industry

and skill, and when the first fruits were just begin ning to give promise of a most glorious harvest, he was himself cut down in early spring, as is feelingly expressed in our/interesting portrait, which, with its motto, may prove a homily to every heart:—It s'est desséché comme un arbre chargé des plus beaux fruits qui succombe à l'excès de sa fécondité.

Francois Peron was born at Cerilly, in August 1775. From his earliest years his intelligence exhibited itself by his extreme curiosity, and an insatiable desire for information. Scarcely had he learnt to spell, when his passion for reading became so strong, that, to gratify it, he had recourse to all those little arts to which children usually resort to procure their play. The death of his father having deprived him of all resources, his relatives wished to engage him in some lucrative trade. Almost in despair at the thoughts of being torn from his favourite delights, he prevailed on his mother to send him to the College of Cerilly, where the Principal, delighted with the tastes of his scholar, became much attached to him, and spared no pains on his improvement. His elementary studies being finished, he advised him to become an ecclesiastic, and the curate of the town consented to take him under his roof, and superintend his professional pursuits.

Up to this period, Peron, absorbed in his studies, was quite ignorant of the extraordinary events which were then agitating the world. He heard of them with astonishment; and, seduced by those principles of false liberty which led to the Revolution, inflamed by what is misnamed patriotism, and seduced by the examples of ancient history, he longed to embrace the profession of arms. He then quitted his home, betook himself to Moulins, and joined the battalion of L'Allier, towards the close of the eventful year 1792. He was soon sent to the army of the Rhine, and found himself at the Siege of Landeau, where the garrison maintained a most obstinate defence. After the siege was raised, he rejoined the army in the field, fought in the battle of Wissembourg against the Prussians, and was again present when the French experienced a defeat at Kaiserslautern. On this occasion Peron. was wounded and taken prisoner; he was soon conducted first to Wesel, and then to the Citadel of Magdebourg. It was many years after the occurrence of these events, when, on the bosom of the wide Atlantic, he entered in his private journal the following reflection:- "Alas! how many excesses and villanies have soiled the trophies of our soldiers !- how many a deep sigh have they wrung from my heart! I could not, indeed, restrain them; but I never joined in them: though I was young and enthusiastic, yet the rights of misfortune were always sacred in my eyes."

During his captivity he gave himself up to study, to which even when on service he was much addicted; and now that he had no other employment, he devoted himself, without distraction, to the reading of history, and the careful perusal of voyages and travels. Being liberated from prison, in exchange, in 1794, he was discharged from the army on account of the loss of an eye, and returned home in 1795, at the age of twenty.

After remaining several months in the bosom of his family, wishing for some active and honourable employment, he solicited the Minister of the Interior that he might become an élève of the Medical School of Paris, where, for three years, he not only studied Physlo, but also devoted himself to Zoology and Comparative Anatomy, and then took his degree. His previous study of Mathematics, of Languages, of Philosophy, and, most of all, his own reflections, had given him such a methodical turn, that he was enabled to arrange and classify his knowledge with wonderful rapidity, in every department of science, and to an extent that astonished his associates.

But, whilst ambitious of distinction, and enamoured with study, a still stronger passion now took possession of his heart; he loved with all his constitutional enthusiasm; but his suit being rejected, on account of his poverty, he was almost driven to despair. His distress was extreme, and he took a disgust even to his country, in which his cruel disappointment was often forced on his notice, and where he no longer expected either comfort or peace. Not being eligible for the army, he locked round for some other adventurous career, and the Government Expedition to the Southern Hemisphere, consisting of two frigates, Le Geographé and Le Na-

turalist, being on the eve of departure, he solicited an engagement in the service; but the complement of Savants being filled up, his offer was rejected. Under these circumstances, he applied to M. de Jussieu, one of the Commissioners for the appointment of Naturalists, imploring his good offices, and at the same time explaining his views with an enthusiasm which manifested he was capable of executing what he so boldly planned. Jussieu listened with astonishment, and advised him to present a written explanation of his plan. He then recounted to his colleagues his conversation with M. Peron; and, in concert with Lacepede, determined not to repel a young man in whom was conjoined such extraordinary energy, with an extent of information much above his years. Some days after, M. Peron read to the Institute a Memoir on the importance of adding to the other Sarants of the Expedition a person who was at puce a Physician and a Naturalist, and who would especially undertake to make researches on Anthropology, or the natural history of man. Every one was delighted with the suggestion, and the Minister conferred on Peron the appointment of Zoologist to the Expedition. The short time that was now at his disposal he employed in obtaining from Messes Lacépède, Cuvier, and others, such hints as would be useful in his researches. He determined to devote his energies principally to Zoology, as that portion of Natural History which presented the widest and most inviting field. He procured the necessary books and

instruments; bid adien to his relations at Cerilly, and, smothering that affection which had so overwhelmingly affected him, he proceeded to Havre. The Expedition sailed on the 19th October 1800; he, with most of the Savants, being on board Le Geographé.

Though several campaigns had familiarized M. Peron with privation, yet, on board of ship, he found himself more put about than he anticipated. Having arrived after all the others were accommodated, there was but a pitiful corner left for him; however, in the midst of agitation and bustle, he retained all his composure and self-possession, and did not lose a moment. The very day he went on board he commenced his meteorological observations, which he constantly repeated every six hours, and which were never interrupted during the whole course of the voyage. Shortly after sailing, he made some important experiments regarding the temperature of the water of the ocean, which demonstrated it was colder in proportion as the depth increased. On reaching the Equator, the whole crew were greatly astonished by an appearance which presented itself. One night, when the heavens were very dark and cloudy, a bright band, as of phosphorus, covered the water at the horizon; presently the ocean seemed in a flame, and sparks of fire appeared to rise from its surface. Our voyagers had often witnessed the phosphorescence of the sea, but they had not seen the aurora borealis, for which they took it; but, on advancing, they discovered that this extraordinary light was produced by a countless multitude of small animals which appeared like sparks of fire. Many of them were brought on board, and M. Peron found, on examination, that they successively assumed all the colours of the rainbout,—at first shining with great brilliancy, till their usual irritability being enfeebled, their colour faded, and entirely disappeared.

The impression which this phenomenon made on Peron, and the peculiarities presented by the organization of these zoophites, determined him to investigate this class of animals; and, during the whole of his voyage, he and his friend Lesueur were ever watching at the ship's side, that they might collect all they could procure. No new object in Natural History can be accurately comprehended without the aid of figures, and hence the great importance of designing, to a Naturalist. Peron was no great artist himself, but his friend Lesueur, who was, moreover, an excellent observer, drew, under his direction, those gelatinous animals whose forms and colours changed every moment after they were taken from the water. The two friends laboured in concert; the one painted, the other described; in their work they had but one soul, and neither wished to exalt himself at the expense of the other.

After a voyage of five months they reached the Isle of France. Here they completed their stores for the Antarctic Seas; and some of the Naturalists, not receiving the necessaries they expected, and discontented with the treatment they experienced,

remained in the colony, whilst Peron considered himself bound by his engagement. Our limits do not permit us to follow him through all the details of his adventures, but shall stop a moment at those spets which formed the principal scenes of his labours.

Sailing from the Isle of France, they shaped their course to the Western Shores of New Holland, and anchored in a bay which, from the vessel which first rode in it, they named Geography Bay. They then skirted along the Western Coast, surveying many harbours, and anchored for refreshment at the Island of Timor.

It is chiefly to Peron's stay in this spot that we are indebted for his labours on the Mollusca and Zoophites. The sea is shallow, and the excessive heat seems to multiply prodigiously these singular animals, and to adorn them with the brightest colouring. Peron spent nearly the whole day on the shore, plunging into the water in the midst of the surf, always at the danger of his health, and times of his life. With the shades of evening he returned from his work, loaded with numerous specimens, which he reviewed, and of which his friend sketched the most remarkable objects. Neither the misfortunes which had befallen the other Naturalists, the dangers with which he himself threatened, had any power to relax Peron's zeal. Nor did his industry, in collecting the innumerable productions of nature, hinder him from finding time for observations of a different kind.

He spent many days in penetrating into the interior of the island, and in examining the aborigines. Though he did not understand their language, possessed such a ready power in comprehending their gestures, and the inarticulate language of ture, that, to a great extent, he understood them; and he had the success with the savages of New Holland and Van Dieman's Land.

Struck with the fact that, during their stay at Timor, his companions almost all sick, whilst the natives were not suffering, he set himself to investigate the cause of the difference, and discovered it in the use which the inhabitants make of Betel, or water-pepper.

On leaving Timor, they sailed direct for the South Cape of Van Dieman's Laud. After having surveyed its Eastern portion, they entered the Bass Straits, and then followed the South Coast of New Holland. Here they suffered extremely; and when they reached Port Jackson, their condition, from privation and disease, was such, that only four of the man could perform duty; so that, had they been detained a few days longer at sea, they must all have perished.

On reaching this friendly port, Peron again found himself in the midst of civilized society, and received many marks of kindness and consideration. But instead of resting from his fatigues, he only enlarged the limits of his labours. He prosecuted his researches into the physical history of man, by studying the civil and political constitution of this

most wonderful colony, whose laws, at once sage and severe, have converted highwaymen and robbers into industrious labourers; and where depraved women, without character, have abandoned their vicious courses, and become the respected mothers of thriving families.

After their departure from Port Jackson, whence Le Naturalist and dispatched to France, another vovage, no less hazardous than the former, undertaken. Le Geographé proceeded to examine the islands at the western part of Bass Straits. again to explore the coast of New Holland, skirting along it m far as the Gulf of Carpentare. dangers increased every hand on these veved coasts, and most severely experienced by the Naturalists, who lost no opportunity of penetrating into the interior. Peron, especially, displayed remarkable courage and activity. He went in quest of the rude savages, without being alarmed at their perfidy m ferocity; he also collected great number of animals of all kinds; he seized every opportunity of examining into their habits, to discover any that might be useful to mariners on the desert land, on would be pable of domestication, or might be naturalized in Europe, or, finally, might become objects of merce, for their fur, oil, mother products. Of the five Zoologists who im been appointed by government, two having remained at the Isle of France, and two having died | the commencement of the second voyage, Peron alone remained for the performance of the duty, and he did it all. Engrossed in the great designs in which he was embarked, he regarded not the privations to which he subjected. Shortly after their departure from Timor, the captain having refused the spirits which were necessary for the preservation of the Mollusca that were collected, he appropriated the whole of his personal allowance to this purpose; and, what was still many remarkable, his enthusiasm spread to many of his companions, who followed his example, and made the many sacrifice.

It was, especially, in the midst of dangers that Peron exhibited the energy of his character, his powers being redoubled when he encountered difficulties. During storms he used to work as a common sailor, and all the while would be observing composedly as if he ashore. No event diverted his attention from whatever promised a useful result, and he always quick in improving circumstances. Having gone ashore on King's Island with M. Lesueur, and several other of his companions, sudden gale drove the ship to sea, and they saw nothing of her for fifteen days. Peron did not for an instant lose his equanimity; he patiently prosecuted his researches without foreboding the evils which might betide. During his stay me this island, whose most magnificent vegetation presents nothing for the nourishment of man, he, without shelter, and in despite of the violence of the tempests, collected than species of Mollusca and Zoophites; he, moreover, studied the nistory of

those gigantic seals, the Proboscidea, which ble in thousands __ the coasts, and whose history forms a striking feature of our volume; and he examined the habits and mode of life of a small colony of eleven miserable fishers, who, separated from all the world, prepare in this place the oil and skins of the Seals, which the English traders distant intervals to procure. These poor people live in huts, and feed upon the Emu . Cassowary and Kangaroos, caught by dogs trained for the purpose, and upon the Wombats they have domesticated. They readily shared their meagre fare with the strangers, and treated them with me hospitality which is often more strikingly exhibited among a simple and feeble race, than in the midst of civilized society.

During their last sojourn Timor, Peron completed the observations he had previously commenced there. He had frequent intercourse with the natives, and now more maturely studied their manners, government, and character, because he better understood their language, which is a dialect of the Malay. With mother associate than his friend Lesueur, he did not fear to chase the numerous crocodiles which, to the inhabitants, mobjects alike of terror and veneration. Without other help they killed one of these animals, and prepared the skeleton, which made adorns the gallery of the Paris Museum.

Being prevented by contrary winds from touching

New Guinea, they returned to the Isle of France,

where they remained five months. There Peron, after examining his collections, devoted himself to the study of its fish and Mollusca; and, notwithstanding the exertions of preceding Naturalists, ne collected many species. After this, they remained a month at the Cape, where he improved the time by making the first accurate examination of the singular conformation of a tribe of the Hottentots, known by the same of Bushmen, many of whom happened at the time to be at the Cape.

Finally, after absence of three years and half, he landed at L'Orient in April 1804, and immediately proceeded to Paris. He me there engaged for several months inarranging the specimens, and preparing the catalogue, after which they were all deposited in the Museum. Peron then hastened to Cerilly, to visit his mother and sisters. The exhausted state of his health, arising from his long continued fatigue, and still more from the nascent germ of that disease, which was even now working in his frame, made repose absolutely necessary; and, happy in finding himself in the bosom of his family, after having done good service, he thought little the recompence of his labours. He soon, however, heard that were endeavouring to persuade the government that the grand objects of the expedition had failed; and this immediately brought him to Paris to refute the calumnious imputation. He visited the Minister of Marine, and, with him, found M. de Fleurieu, and several other savants. Before them all, in a modest and respectful tone, but at the

time with confident freedom, he demonstrated what his companions had done for geography, mineralogy, and botany; he enumerated the objects which had been procured, the drawings which had been executed, and the observations and descriptions which had been amassed, saying but little of the dangers which had been endured, and the sacrifices which had been made in obtaining the collection. Questions must put to him, which he answered promptly and satisfactorily; and the impression made upon the minister was such, that, after requesting him to visit him - times, he engaged his services, to prepare for publication the nautical portion of the voyage, and promised to speak to the Minister of the Interior concerning the historical part. Accordingly, he had the same success with this latter functionary, who entertained him in the most flattering manner, and appointed him, along with his friend Lesueur, to publish the account of the whole voyage, including a description of those objects which in Natural History.

Thus was Peron, all at once, placed in the ranks of celebrated men; he courted and surrounded by admirers, and took pleasure in relating what he had witnessed in his voyages; and the interest with which he was listened to often induced him to enter into minute details.

In the meanwhile, the collection, now arranged in the Museum, we to be examined, and commission named by the Institute was appointed to report to Government. This commission composed of Messra Laplace, Bougainville, Fleurien, Lacépède, and Cuvier; and their report, drawn up by Baron Cuvier, bore that the collection contained more than 100,000 specimens of animals, amongst which many new genera; that the number of new species more than 2500, and that Peron and Lesueur alone, had made a acquainted with more animals than the whole of the travelling Naturalists of modern times; and, finally, that the descriptions of Peron, prepared upon a uniform plan, embracing all the details of the external organization, establishing their characters, in positive manner, exhibiting their habits, and the economic uses to which they might be applied, would survive the revolutions of arrangements and systems.

Although Peron was chiefly occupied with his great work, the account of the voyage, yet he deemed it expedient to detach from it variety of separate memoirs, which he read to the Institute, the Museum, and La Societé de la Medicine. Among these was the memoir on the genus Pyrosoma, that Zoophite so pre-eminently phosphorescent, of which we have already spoken; another the temperature of the sea; another on the petrified Zoophites which were found in the mountains of Timor; and others on the dysentery of hot climates; the Betel; on preserving the health of seamen; on the localities of Seals; and on the strength of savages when compared with civilized men; lastly, he undertook complete his-

tory of the Medusa, concerning which, he had made many observations, and of which he collected a ber of me species.

In due time, the first volume of his " Voyage aux Terres Australes" appeared, after being long delayed by the plates, and mopportunity then afforded of judging of Peron's merits. We find it distinguished by the most scrupulous accuracy with regard to facts, merit of primary importance in works of this kind. The descriptions of the soil and climate, and the meteorology, present phenomena which extremely curious; and the comparison of our author's views with those of previous voyagers, often lead to general results. The sketches of the wandering tribes of New Holland, and those inhabiting Van Dieman's Land, make us acquainted with two of savages of shocking ferocity, and expose the limit of the misery and degradation of the human race. No voyager, with the exception of Mr George Forster, (who, like Peron, is often quoted in the following pages,) has been m successful in seizing the physical and moral qualities which distinguish different tribes, and in marking the connection between their organization, manners, intelligence, and numbers, and the resources which their soil afforded them; and if Forster's narrative is superior, from the excellence of its style, our voyager has the advantage of being free from every systematic bias, and has withheld from his sketches the colouring of

Peron lived to finish only the first half of the

second volume, which in no way inferior to first; his sufferings not preventing him from proceeding to the last with undiminished

Our indefatigable author had also made progress in another work of that ordinary magnitude and importance. This was a comparison of the different races of mankind. He had collected observations on this point from every traveller and physiologist, and had himself examined the natives of the Cape, of Timor, and those of New Holland and Van Dieman's Land; his design being to present a philosophical history of different nations, considered in their physical and moral constitution. He proposed, vainly as it proved, not to publish this work, which had been the subject of his thoughts since his first starting, after he had made three other voyages; one to the northern parts of Europe and Asia, a second into India, and the third to America: to devote fifteen years to this task did not appear to him too great a sacrifice; the plan was formed, the various inquiries were arranged. and he unceasingly occupied himself in finding the answer to the proposed problems. He had prepared several memoirs on this subject, which he consigned to oblivion, because they were not free from The fragment which contains the history of the natives of Timor is the only mearly finished, the figures which were to accompany it, having been designed the spot.

His portfolios included also a description of the quadrupeds, birds, and fishes he had met with, and especially of the invertebral animals, whose history undertaken, and of which his friend had made more than a thousand drawings. These animals still exist in spirit of wine; the drawings executed from the recent animals; and M. Lesueur, who assisted in collecting them, could supply much information concerning their habits, and their mode of life.

For a systematic analysis of the different memoirs which Peron read to the Institute, and other learned bodies, and an exhibition of the new facts and the important results which these papers contain, we refer the student to an eloge in the 7th vol. of Mem. de la Soc. d'Emulation, wherein M. Alard has per formed the task in a manner that admits of min-provement.

With regard to his moral character, Peron not only gained the esteem and friendship of those with whom he associated, but also acquired an extraordinary ascendancy over them. He also most disinterested and generous. The minister conceiving that his small pension was altogether insufficient for his requirements, wished to appoint him to some lucrative and honourable post. "Sir," he replied, "I have devoted my life to Science, and no bribe would tempt to spend my time in other pursuits. If I had office I should discharge its duties, but I am not at liberty dispose of myself." When he was entrusted with the preparation of the account the voyage, he betook himself to small apartnear the Museum, along with his friend Le-

sucur, and there lived almost penuriously, with the sole object of increasing the comforts of his family.

Meanwhile, his pectoral complaint made fearful progress, he suffered severely from it, and his cough and fever left him. He came to the conviction it incurable; and that it is useless to take of himself, to cease from his arduous labours. Being urged, however, to go to Nice, he thought it his duty to comply, and the journey and climate, for a time, checked his malady. Upon this he immediately recommenced his labours with fresh ardour. He went out to sea in an open boat, and spent whole days on the water collecting mollusca and fishes, prosecuting those inquiries to which he was devoted; and it was only that he might not distress his inseparable friend, that he would ever retreat from the rain and cold, to which he frequently exposed himself. The letters he wrote from Nice were absolutely enthusiastic; he painted in the liveliest colours the joys imparted by the study of Nature, and was altogether inebriated with some discoveries he had made. But, after all, he was conscious the tide of life was fast ebbing; he rejoiced he had obtained a few months respite, and he improved them, that the collection he there made extremely valuable

On his return to Paris, Peron's health became worse than ever, and he had now me hopes whatever of his restoration. He anticipated his approaching end with surprising tranquillity, and retired to the place of his nativity to finish his days. He bid a

last adieu to his friends Paris, a duty most painful to himself, and to them. From a opinion tertained of the sanatary virtue of a cow-house, his bed was prepared in building of that description. which belonged to mold school-fellow and friend, and where every comfort supplied. When he required nourishment, his sisters, - his upwearied friend, milked the cows, and gave him the milk, which be took with pleasure. He was surrounded by those who were most dear to him: and disentangled from all thoughts of his renutation, he often said that his last days were the happiest of his life. His friend read a great deal him, which afforded him gratification. Every thing like irritability and impatience had now disappeared, and his reflections for the future much engaged about those he left behind. In these circumstances his strength rapidly declined, and he breathed his last on the 14th December 1810, another proof that Science has its martyrs, and that its surest victims are often its most ardent and successful votaries.

INTRODUCTION.

WE purpose, in our present volume, to introduce to the notice of our readers those animals which most Naturalists class under the name of AMPHIBIA. and, properly, as Amphibious Carnivora. This interesting group consists of two families, the Walrus or Sea-Horse, and those animals which are popularly known under the name of Seals, including a vast variety of creatures which differ greatly from each other. All these animals am mainly aquatic, but frequently also resort to land, where they remain for days, and even for weeks and months. To the consideration of these Amphibia, we may to add that of the HERBIVOROUS CETACEA; not because, with some Zoologists, we judge this to be their more natural position, but, we me free to confess, solely for convenience sake; because, though, in former volume, we were solicitous to associate the herbivorous with the ordinary Cete, or true Whales, vet we found that the latter formed so extensive and important a subject, that, in doing justice to them,

we could not overtake the other. These herbivo-Cete differ, in many important particulars, from the true Whales. They mot like them blowers, with spiracle upon the summit of the head, but have regular nostrils like quadrupeds; and do they frequent the deep ocean, but habitually resort to the sea-shores, and the estuaries of rivers. In both these particulars the herbivorous Cete associate closely with the Amphibia; but from them, again, they differ in their structure, in that their extremities, especially the posterior, almost wholly disappear; whilst they are still present, though much modified, in the Seals; and also, because they never leave the water, whilst, we have already noted, the Amphibia often do. To these two groups propose to add third. The term Cete. we remark, though now confined in the manner above referred to, was, by the ancients, used in a wider sense, being made to include, along with the Whales, those animals which they regarded as Sea-Monsters. We have but very obscure intimation of what these Monsters really were; they were not true m common fish, but were reputed to be prodigious animals, whose form and nature were imperfectly understood; and which were peculiarly the objects of vulgar wonder and superstitions dread. Now, it so happens that, even at the present day, it is asserted that such Monsters exist, whose characters all the assiduity of Naturalists has not hitherto satisfactorily ascertained, and the consideration of these will form the concluding portion of this volume. The

most remarkable of these creatures the Sea-Sea-Pent and the Kraken; and, as the allusion to these animals would naturally be expected in the Naturalist's Library, so no occasion could be found the eligible the present. The Amphibian then, and the herbivorous Cete, the Sea-Serpent and Kraken, will form, at least, a natural combination.

These creatures must prove a peculiarly interesting subject to every inquiring mind. Most of readers are probably aware, that some of these animals constitute the ground-work of the many strange stories which, from age to age, have been current concerning Sirens, Mermen, Mermaids, &c. Verv decidedly, we say, that these were not, and are not, altogether baseless figurents, though much error prevailed, and sober truth me obscured. Every intelligent individual will be forward to inquire which of these animals the type of these far-famed and ill-defined beings; and, may here state, in word, that we shall take an opportunity of answering this question, and of showing that several distinct kinds of animals have given rise to these interesting narratives

The truth is, that much remains to be done in elucidation of all the groups of which we propose treat; and, certainly, not least of the Seals. Most individuals must have heard of the fleets that are fitted out to hunt these creatures within the Antarctic, well as the Arctic Zone. One species extends to the length of twenty-five and thirty feet, with more than ordinary proportionate bulk, so

it reaches to half the dimensions of the Great Greenland Whale. In comparison of this extraordinary size, all merely terrestrial animals sink into insignificance, and hence we cannot wonder that this animal has received the some of the Elephant Seal. There are others which attain very huge dimensions and most well educated persons must have heard something of those objects of astonishment, described by mariners under the various of Sea-Lions and Sea-Leopards, Sea-Bears and Wolves, Sea-Horses, Cows, and Calves, Sea-Dogs, Swine, Hares, and Apes, which, shall show, nothing more than some of the applied to the animals we are about to describe, and which are really not less interesting than their terrestrial namesakes.

> "In the waters III may see all creatures, Even all that on the earth are to be found, III if the world IIII II deep waters drown'd."

It must not, however, be supposed, that it is from approximating to the marvellous that subject derives its only, or even its chief claim to attention. A moment's consideration evinces that the external circumstances of most of these animals, and, consequently, their habits, must be altogether peculiar. The Amphibious Carnivora are formed on the seneral model as other quadrupeds, and yet the land is to them strange and unwonted element. Their usual abode is in the sea; and hence there must be interesting modifications whereby their structure is

adapted to the water. This will lead to a short elucidation of their Comparative Anatomy, eminently exhibiting the workings of creative power. We have also hinted that they are objects of mercial and national importance. For them navies float, and the bold penetrates the polar seas, and circumnavigates the globe. To him, therefore, it is mobject of deep importance, accurately to know, and speedily, and certainly, to meet and to capture his prey. This leads to inquiries regarding the resorts of these animals, their habits, their energies, and powers, all of which are curious and interesting. Hence, then, we shall be led to dwell somewhat both on their dispositions and intellectual endowments, whilst we must not overlook the valuable products which lead to their capture, and the whole varied details of the animating adventure.

 the respected author of The History of British Quadrupeds, in 1836-7, remarks—" There is not, I believe, a single group among the whole of the Mammiferous class, which is at present indistinctly known, and of which the species are much founded, as the Seals."

How far we have succeeded in elucidating the subject must be left to the judgment of others. To a few facts, however, concerning and plates, we shall take the liberty of adverting. Our volume is, believe, the vehicle of delineating, for the first time, four of the most important species of the group. These the animal which regard as the Bearded Seal, (No. 5;)-the which, on high authority. - have been led to understand is the female Sea-Elephant, (No. 17;)—that which have called the Sea-Lion of Pernetty, (No. 19;) and the Fur-Seal of Commerce, (No. :) to which we may add, that the Sea-Leopard (No. 12) has not, so far as we know, appeared in any work - Natural History. The drawings of these five in fact original, four being taken from specimens in the Royal Museum of the Edinburgh University, and for information regarding which, we are proud to acknowledge our obligations to the distinguished Professor of Natural History; whilst the remaining one has been derived from the splendid specimen which graces the Liverpool Museum, and for further details concerning which must refer to the body of the work. Besides these, there are ten other species, taken from French, Russian, and American authorities, which are now, for the first time, presented the British Public. These are "the true P. vitulina" of the French Coast, (No. 3.) and the Marbled-Seal, (No. 4,) of the distinguished Caviers; the Rough-Seal, (No. 8.) of those animals which constitutes considerable portion of the Northern Seal fishery; the Hare-Seal of Northern Russia, (No. 9;) the Small-nailed Seal of De Blainville, (No. 11:) the Crested-Seal, (No. 14.) and the Hooded-Seal, (No. 15,) over both of which there hangs considerable obscurity; the Sea-Elephant of Peron, (No. 16,) the chief object of the South Sea. fishing for Seal oil; and the Cape, (No. 20,) and Lesson's Otaries, (No. 24.) These exhibitions of fifteen species, (may me call them?) obtained from sources and authorities of established celebrity, together with those more familiarly known, and best efforts to associate with each whatever specific information has been collected, will do something, trust, to increase the facilities of investigation, as well provoke the further endeavours of Naturalists, and others, to triumphs over the many difficulties which still envelope this interesting subject.

THE AMPHIBIOUS CARNIVORA.

An Amphibious animal is said to be me which is able to live in two elements, the elements implied being air and water; and there was a time when it was generally supposed that there were such quadrupeds in existence. The reader will please to observe, that we are not here speaking of animals which can reside me the land, and in and me the water; for such there unquestionably are 1 me these me about to dwell, and in this old and familiar acceptation of the term we meen to me it.* But the time

[•] For this present and preceding ages, and preceding ages of the most authoritative in the science; amongst others those of Baron Cavier and Latraille. It is true that Cavier did not here follow the footsteps of Lianneus, who placed these Amphibia in 22 and off off creater and Fera, and made the Amphibia his off class, including Tortoises, Frogs, Serpents, and many the Fish, such as the Sturgeon, Shark, Skate, &c., so making a great jumble. We

is not long gone by when it was supposed that these Amphibia differed from other animals, in that it to them matter of indifference whether they lived on land, and breathed the air of heaven, or resorted to the water, and there carried the process corresponding to that of respiration, do the fishes in the ____ It is generally known that both in quadrupeds and fishes there is a kind of double circulation of the blood, the greater, moving round the whole body, for the purpose of its growth and regular nourishment, and the lesser, confined to the lungs or the gills, having for its object the purification of the blood, that it may be fitted for its proper uses. It were evident that, when living in the water, these Amphibia could no more their lungs than could do, and it was equally well known that they had no gills, by which they could live as fish do; and the question therefore occurred, By what peculiar arrangement is it that these animals live in water without gills and without air? Nor was it long before an explanation of the phenomenon was offered. The two circulations above alluded to do not communicate with each other, generally, throughout their circuit; but

that previous to Linneus' death, a single animal was discovered which could live not only on land but also in water. This the Lizard Siren of Carolina, which is possessed of true lungs and branchize, and the them severally on land and in water. Since that date a few other animals have been discovered similarly constituted; and this has Maturalists to arrange them in separate class as subdivision.

the Amphibia that a sluice-gate isted between the two, which was opened when they under water, in that no obstruction occurred to the circulation. By this aperture, (which existed in the heart, and was called the oval hole, foramen ovale,) it me asserted that both circulations went forward, and without any prejudice to life. It is because this statement still maintains its ground in of our most popular works an natural history that we have thought it right to notice it. Thus the eloquent Buffon,-" The Seals and Walrus alone live equally in air and in water, and quently they alone merit the appellation of Amphibious." And wonder the Count made this statement, because he only quoted the memoirs of the most learned societies of the day,-- As these animals remain long in the water, and thus the transmission of the blood cannot be performed without respiration, they have the foramen ovale open, and therefore do not require to respire."* sentiments he in fact only re-echood the opinions of the Physiologists of his time.

The hypothesis was in fact based on erroneous statements, which passed current for facts. It is true these Amphibious animals live long in the water, but still they must regularly come to the surface, and they breathe precisely after the manner of

[#] Hist. de l'Acad. des Sciences, tom. i. p. \$4.

[†] Though this explanation is sufficient apology for Buffon, yet the men theory, founded on the same errors, should not have appeared in Bingley's British Quadrupeds, 1829.

their namesakes the Common Dog or Lion. Not that there is no distinction between their respirations, but this difference refers to time only, and not at all to method. Many of the Mammalia breathe twenty times in a minute, and every one knows he cannot long suspend this vital function; whereas the Seals, instead of breathing twenty times in minute, will occasionally not breathe once in twenty minutes. We should be happy could we - once account for this difference. The Amphibia often feed under water; they dive for their prey, they generally swim under the wave, and therefore the attribute is essential to them. It is best, however, at once to avow ignorance, and to confess that hitherto the fact has not been satisfactorily accounted for. Some peculiarities in their circulation have indeed been noted, and go way, perhaps, in the elucidation of the point. Thus, are told by Baron Cuvier that they have a great reservoir for venous blood in their liver; and Mr Houston of Dublin has recently succeeded in demonstrating other venous reservoirs in other neighbouring parts; and so far this is valuable = a fact, and may assist in the explication of the truth. But it would be a great mistake to suppose that the establishing this anatomical fact, is the same as explaining how the function of respiration can be suspended in the Amphibia much longer than in the other Mammalia. These last and not quite destitute of manual reservoirs or cinuses, and, moreover, what is desiderated is not only mapparatus to contain the vitiated, and by many

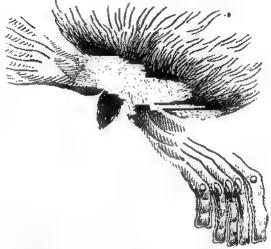
reputed hurtful and poisonous blood, but rather reservoir of purified arterial blood, which would gradually pour forth its contents circumstances required. Such apparatus has lately been pointed out in Whales, and satisfactorily, we think, accounts for their capabilities, but we believe that no corresponding provision has hitherto been detected in the Seals—though we would almost venture to predicate its existence.

But leaving this point, we proceed to remark, that the bodies of the Amphibia are beautifully modified for their requirements in the watery element. If glance at the general shape of any of the Seals, it will appear that its trunk as much resembles that of a fish - that of a quadruped. This change is effected chiefly by a modification of what is called the pelvis, corresponding to the haunches in man. In the herbivorous Cete the bony framework of these parts disappears, whilst in the Amphibia it remains, but undergoes = great change. It becomes comparatively very small, and very much elongated, the bones of the opposite sides approximating to each other, so that the pelvis appears like an elongated and slender pyramid, terminating the trunk very much like the hinder part of a Whale.

The extremities undergo a still more striking change. The fore-legs or arms, which are destitute of collar-bones, was so hid beneath the skin of the

body, that only the wrists and hands appear; and they me thus me short that they me scarcely be advanced forwards at all. But what they lose in extent they gain in power. They are peculiarly constructed for swimming, and also for seizing or holding. The animal has the power of presenting the water either the edge or the flat part of the paw; and it moreover either approximate its fingers, which have an intervening membrane, and are webbed, if it can separate them, so in to diminish augment the surface of this oar a paddle. it has been called. The hind-legs are still more modified. From the knee downwards they are placed not at right angles, but in a line parallel with the body. The thigh-bone is very short, and is bent that its lower portion the knee is anterior. The legs have in this way very little power of motion, the foot alone enjoying it; and that with great facility and power, especially in bending and extending itself upon the leg, thus removing it from, approximating it to, the mesial line. One effect of this arrangement is very apparent, viz. that the posterior extremities, thus altered, much assimilated to the broad horizontal tail of the Whale tribe; and that the Phocidse thus, like them, enabled to dart towards the surface of the ocean for breath, and with a rapidity which otherwise they could have attained. In all the species, the fingers are readily be distinguished through the paw; and in most the nails appear . the termination of the member. In group, however,

this is not the case, and wery singular structure exhibited beneath presents itself.



Here, it will be perceived, the membrane extends far beyond the nails; and not m a continuous web, but like so many streamers, or broad leathern straps, which hang down in the water. We have not seen any attempt to assign a me to these curious appendages, which, in the language of the Scal-fishers, have given to the extremities the mem of flippers.

With these several modifications we need scarcely remark that the amphibia are admirably adapted for swimming. Accordingly, Zorgdrager says, even of the clumsy-looking Walrus — Sea-horse, = That in descending the depths of the ocean, and swimming

along its surface, it is followed in row-boats with as much difficulty as the Whale itself." Again, Steller says of the Ursine Seals, "They swim with amazing swiftness and strength, at the rate of eight miles hour, and when wounded in the water will seize the boat, carry it along with great impetuosity, almost if they flying, and will often sink it." And more, intelligent countryman Scoresby, "When coming to the surface to respire, the Seals often raise their whole bodies out of the water; their progress is pretty rapid; their action appears frisky, and their general conduct is productive of amusement to the spectator. The sailors, when they observe such a shoal, call it a Seal's Wedding."

But though the habitual element of these amphibia is the water, yet their habit of resorting frequently to land must not be overlooked. The most urgent call for this is connected with the bringing forth and suckling their young; and, besides, they frequently resort at other times to the shore, and to ice-islands, and there delight to bask in the sun, repose from the agitated wave. With limbs, rather fins, such as we have described, it will at men be seen that the land cannot, by any means, be natural or suitable resort; and this should always be remembered, for they sometimes judged if they were wholly terrestrial. The fact is, that though properly enough designated

quadrupeds, they cannot stand on their hindlegs; and, when advancing, they often make no use whatever of their fore-paws either; conditions these which would bring most quadrupeds to a dead halt. Not so, however, with these animals. Thus Captain Weddell remarks of the Fur-Seal :- " The agility of this creature is much greater than from their appearance m observer would anticipate. I have seen them, indeed, often escape from men running fast in pursuit of them;"# and Scoresby, # They cannot be said to walk, yet they shuffle along, especially over the ice, with surprising speed."† And once more, Even out of the water," says Steller, "especially the females, can run so rapidly that it requires a swift person to get up with them. Cursu vix ne vix quidem a celeri superantur."1 This. beyond doubt, far exceeds the powers of other quadrupeds -- without the use of legs to outstrip the speed of man; and thus we have here another of those peculiarities on which it is interesting to dwell, and to inquire in what way it is to be explained. We feel happy that on this point we can gratify readers. Serpents, I is known, have a progressive motion, without feet, which is sometimes sufficiently rapid; but they move by bending their bodies from side to side, which Scals do not; and, therefore, these last do not advance like them. On the contrary, they move forward by a

^{*} Voyage towards the South Pole, &c., p. 140.

vertical, not a lateral motion of their spines, what after the fashion of the caterpiller. Referring the curious reader the valuable memoir quoted below,* and now give in a few words popular account of this strange phenomenon.

The remarkable fact is, that during the progression of Seals on land, the hind-feet are never employed, and the fore-feet not necessarily. In explanation, observe, first, that there is a remarkable change effected on the structure of the spine, - back-bone. This is well known to be not a single bone, but a strong column of many bones, amounting to twentyfour in man, and to many more in the majority of quadrupeds. In most, there is between each vertebra. as it is called, an intervertebral cartilage, which we may compare to a piece of Indian-rubber, placed between the bones, to take off, in man, the effects of every severe shock, keeping the brain on its summit free from in jar and agitation. Now, the intervertebral cartilages in the Seal are quite peculiar, and very large, especially in the regions of the neck and loins. Each of them is composed of a number of fibrous coverings, forming concentric rings, the man external of which broad and strong, whilst the internal am smaller and slender, the last, which lines the central cavity, being so fine, that it seems to _____ the character of a serous membrane. The centre of this consider-

by M. Duvernoy, see Mam. du Mus. d'Hist. Nat. ix. pp. 49,

able cavity corresponds with that of the body of the vertebræ, and is filled with reddish-looking jelly. This curious structure, will we be seen, admits of far extensive motion than is usual. Again, the muscles of the spine undergo great and corresponding modifications; but on these we shall not dwell longer than to remark that they are peculiarly strong on all sides. When, then, the Seal wishes move forward, it bends underneath it the hinder part of its spine, so making a kind of arch, and then fixing this posterior portion, it suddenly straitens out the whole body in front; and in a repetition of this movement consists the very peculiar kind of jerking leap for which these amphibia am so famous. This is so singular that it has been dwelt upon, and described with sufficient accuracy, by several observers who knew nothing of their comparative anatomy. To give example.—" Their mode of propelling themselves," says Weddell, "is by drawing their hinder flippers forwards, thereby shortening their body, and then projecting themselves from the tail." When, again, they wish to ascend an ice-

The account in the text is more satisfactory than the following, whilst it is, at the man time, corroborated by it. — The Common Seal in the Zoological Gardens, when on the land, scarcely uses its feet in walking, but only the abdominal muscles, jerking itself forward by a series of convulsive motions. It only used its fore-feet massist in maneing itself, and when it turned on one side, it expanded its hinder feet, which are generally contracted and hald together, with the depressed forked tall between their base." J. E. Gray, Annals of Mat. Elist.; Sept. 1838, p. 78.

island or rock, the facility with which they accomplish their object is altogether astonishing. They then make especial use of their fore-paws; and those which have claws implant them like many grappling-irons, and having thus secured fixed point, by some of the admirable structure have been considering, they uplift their monstrous with the greatest rapidity and ease.

Having thus noticed that the external structure of these Amphibia is admirably adapted for their watery element, and yet made wonderfully conformable to their requirements on land, we proceed to remark, that their vital functions also are strikingly fitted for their peculiar exigencies. Their respiration, might readily be inferred, differs considerably from what is observed in most other animals. Even the air passages undergo a change, which ought not to be overlooked. We refer particularly to the nostrils, whose state, unlike that of other quadrupeds, is that of being habitually closed, instead of being uniformly open. This was first noticed, me believe, in a Walrus domesticated in England, of which, will appear in account of that animal, it said, " It proper and shut its nostrils at pleasure." The Count Buffon, again, pointed out the peculiarity in a tame Seal which he examined-" In the intervals of breathing, the trils accurately closed, and, the of inspiration being completed, they were shut as before." F. Cuvier, | | later period, made | similar observation, m that m apprehend may safely affirm that this peculiarity exists in the airpassages their ordinary condition. This state of parts of course supplies ready and of judging of the frequency of respiration, and here, too, there appears to be marked difference, even on land, from what obtains among other animals. Thus Buffon, in the instance already alluded to, remarks, "The period between its several inspirations very long: the creature opened its nostrils to make strong expiration, which was immediately followed by inspiration, after which it closed them, often allowing two minutes to intervene without taking another breath." In connection with this peculiarity, M. F. Cuvier makes an additional and important remark-" Notwithstanding the slow and irregular breathing of these animals, the regular supply of air to the lungs is in medegree diminished, if we may judge from the very free motion of the ribs, and the great quantity of air expelled at each expiration. In truth, the quantity of air taken in makes up for the small number of the respirations; for few of the Mammalia have appeared to me to have so high a natural temperature as the Seals."*

But, however great the peculiarity as exhibited on land may be, it is trifting when compared to its singularity in water; where it is not managed for these animals to remain for a quarter of an hour at m time

^{*} Mammifères. Livraison, Sept. 1819, p. 2

under the wave, (the usual period even for Whales;) and are not prepared state what the extreme limit may be. Thus, Crantz states that when harpooned they must up in about quarter of hour to take breath: * and Mr Edmonston informs us that he _____ of the Bearded Seals entangled in m net, which struggled with amazing force for more than twenty-five minutes, without inspiring, and yet was brought to the surface alive.† An observation of M. F. Cuvier's is still more remarkable. He states, concerning those which were preserved in the Menagerie at Paris, that he has been them, while asleep, keep their head under water consecutively, and consequently without breathing, for an hour at a time. This is an traordinary phenomenon, allowing that the animal was in that somewhat lethargic condition, to which me shall ere long allude.

We now proceed to remark, that under water the Seals often subjected to enormous pressure, which must be resisted at the respective apertures of the body, by an appropriate mechanism. So is it, has have already seen, in the nostrils, and similar provision is made for the eye; and in more ways, perhaps, than one. Thus Albinus remarks, that at the inner angle of the eye there exists third eyelid, which may easily be drawn over the whole eye; apparatus, he adds, frequently supplied to those animals in which the eyelids

^{*} See me account of the Greenland Scal,

View of Zetland, vol. ii.

See my account of the Seal.

required as much for defence as for a covering.* Forster makes a similar statement: and to these remarks we subjoin a curious observation of Crantz. in relation to the Walrus. "As I | first searching for the eye, and could not find it, a Greenland boy pressed the skin, and out sprung the eye; so I found I could squeeze them in and out to the depth of inch, from whence I might conclude that these creatures also had a shelter for their eyes, in stormy weather, by drawing them into a safe repository." Finally, it is the same with the orifices of the ears: by means of a peculiar and somewhat intricate structure, described by Rosenthal, and to which - can here do nothing more than refer, it will be found that these apertures too can be closed, and thus made impervious to the greatest pressure from the superincumbent fluid.

One or two circumstances regarding the digestive functions of the Amphibia, and sepecially their alleged long protracted fasts, highly curious. We premise, however, that man not all sure how far the opinion generally promulgated, that they solely carnivorous, is correct. At all events, it should be noticed that the testimony of many observers is against this opinion. Thus Crantz, "fish and marine vegetables the food of the Walrus;" and Pernetty, "seals live upon fish, sea-birds, and herbs;" and Peron, "in the atomachs

[·] Academica Annotationes, Lib. iii.

[†] For some interesting particulars concerning the comparative anatomy of the group, see an interesting paper of Lesson's in Dict. Class. 1. 200. 402.

of those killed we found squid (various kinds of sepia) and many fungi." I would hence appear they omnivorous. But to proceed, it is a fact that many of them feed voraciously, and acquire an imcovering of blubber, with which they come loaded to shore. The period occupied by the processes of parturition and lactation is rarely stated less than six weeks or two months, and is often said to be twice as long. Now, one of the circumstances which we would insist is this, that many observers affirm that during the whole of this period they live without taking any sort of nourishment. The words of the famous Alexander Selkirk, as reported by Wood-Rogers, are these:-Towards the end of the month of June these animals come on shore to bring forth their young, and remain to the end of September without stirring from the spot, and without taking any apparent kind of nourishment." Captain Weddell's statement is still ____ striking:_"The males come ashore about the end of August and beginning of September. As they live while on abore entirely without food, they become very lean by the middle of December;"† and Peron says, that during the period in question member of the family either eats, m goes to sea. 1 This opinion might be further corroborated by the statements of Forster, and of other respectable observers: but the proposition that

Kerr's Coll. of Voyages.

I Lib. supra cit, p. 153.

Voy, aux Ter. Austr. t. ii.

whole genera of this group, not hybernating, but all alive, and discharging the most important functions of the animal economy, live for three consecutive months without food, is startling, that mind the greatest difficulty in receiving it. Our scepticism, too, is the more excusable, inasmuch = the evidence on the point is not free from contradiction. Even the testimony of Peron is liable to this charge; for while, on the me hand, he states, in the words already quoted, "that during the period no member of the family eats," vet he elsewhere mentions, "that when land, they suck in with delight the fresh water of the ponds and marshes they frequent: and that fungi were discovered in the stomachs of those they killed." Nor is this the only evidence that may be adduced on this side of the question. The account of these animals given in Anson's voyage, though short, is explicit- "During the time they continue on shore, they feed on the grass and other plants which grow near the banks of the fresh water streams." And once more, Pernetty, speaking of the Sea-bears, says-" They live on. herbs, fish, and other animals, when they infind them their lair. This, we confess, appears to us by much the most probable account of the matter, and we cannot but suspect that the other,

[&]quot; Lib. eit. t. ii. 44.

t Kerr's Collection of Voyages, xi.

¹ Voyage ann-Maloun, t. ii. 41.

though supported by so many respectable names, been first advanced on insufficient grounds, and been propagated afterwards through inadvertency. These counter-statements should, all events, induce to receive the startling proposition with great hesitation and caution; and the more so, as, even with the precarious supplies just adverted to, it might be anticipated, that the animals could not fail become in the last degree emaclated and feeble.

We have still to add a scarcely less singular circumstance, viz. that these animals in the habit of filling their stomachs with imnumber of great hard stones, mu that it is wonder how their coats on not torn to pieces by them. Thus, I the words of Forster .-- "The stomachs of some were filled with ten at twelve round heavy stones, each the size of two fists." The circumstances under which they include in this habit are well determined. Most frequently it has been associated with their extraordinary fastings: but these cannot be the only cause; because sometimes they have been found in animals which had long been domesticated, and taking their usual quantity of food. This suggested the idea, that the craving might be owing | their unnatural position land; but this is met by the fact that sometimes they have been found in the stomachs of those cently captured. It was under these circumstances, believe, they found in the stomach of the Grey Seal, captured in the Severa, and in the

Museum at Bristol. Peron says of the Proboscis Seal, "We usually found in the stomachs fungi, stones, and gravel;" and Dr Parsons—"In the stomach of the Great Seal there were about four rounds of flinty stones." We have not met with any satisfactory explanation of this phenomenon; and shall decline all speculations concerning it.

But me must bring these remarks in the physical constitution of the Amphibia to a close, by a very few hints concerning the means system, and means especially the

The prevailing statement in the works - Natural History is, that the brain much developed in this group, and the cerebellum comparatively more Judging from an examination of crania, should say, that this organ appears to vary very considerably in different species, and that while in it is rather large, in _____ it is remarkably ____ This perfectly corresponds with the degree of acuteness and intelligence which is nearly universally allowed them. Weddell observes that in instinct they are little inferior | the dog; and subjoins | remark which ought not to be forgotten, that their sagacity in water much exceeds that which they manifest shore. With this fact in view, it curious to observe how Naturalists, having procured a few Seals, and placed them in a most unnatural and of domestication, to which they submitted with wonderful placidity, have, after minute observation, concluded that they were sparingly endowed

with all the chief instruments and outlets of mind. Thus the most elaborate, as it is the most celebrated. examination of the senses we have seen, is recorded in very much the following terms:-The sight in the Seal is perhaps less imperfect than the other senses, though they best in a feeble light, and do not appear easily to distinguish forms. I draw this conclusion, says the author, the more freely, because the Seals, under observation, always came to examine every put within their reach, however much in appearance it differed from that which alone they would taste. The hearing is proportionally much less perfect than the sight. Having mauricular appendage, and passing a great portion of their time at the bottom of the sea, where the orifice must be closed, they must almost remain strangers to all sonorous vibrations; and the very trifling exercise to which these organs are subjected would alone suffice to produce the deficiency which is observed. smell, judging from the external organization, should not be better than the already alluded to; the taste and touck are even worse; and to sum up in a word, " Ce que j'ai dit des organs des sens, ne doit laisser aucune doute ___ leurs imperfection."* But this is too much to be endured. Suppose the circumstances reversed:-that - of these submarine beings, whose imperfections and thus contemned, had captured unhappy Naturalist, and in watery chamber of ocean sate in

D Ann. Mus. t. xvii.

judgment in his five senses; and in then to infer that he was imperfectly constituted, because, in his hapless plight, he saw indifferently, heard and smelt worse, and so on; should we approve their inference, or admire their wisdom? The wuth is, the eye of the Amphibia is a perfect study, and would well repay a lengthened description. It is very large, and quite spherical; the scierotic or outer membrane is very peculiar, inasmuch as it has soft and thin zone round its middle, thickly covered with muscles, whilst both before and behind it is thick and almost cartilaginous.* The precise use of this structure has not yet been discovered, though Blumenbach has thrown out the idea that it may enable the Scal to see both in air and water. Rosenthal for confirms this opinion by having observed, that the mechanism is peculiar to those animals which live in a dense medium, such a water :- that the remarkable thickness of the coat is found in those animals in which the orbit is not wholly osseous, and that some fishes have the sclerotic nearly cartilaginous. With regard to the ear, it ought not to be forgotten that fishes, with external me or aperture, have in their native element a acuteness of hearing which, according to respectable authorities, far exceeds our own; and Rosenthal that the auditory nerve of the Seal is very large. Respecting the sense of touch, we shall here quote M. F. Cuvier, who

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^{*} See its Dissection in the Crested Seal, by Drs King and Ludlow. in we account of that animal.

well remarks, " The whiskers are very sensible portions of the ____ of touch. Those hairs placed on each side of the mouth, and at the corner of the eve. communicate with nerves which remarkable for their size, and to which, as I have often convinced myself, the slightest impression communicates immediate sensation." So is it, we believe, with the other senses; which we consider wonderfully adapted to both elements. Thus Buffon remarks of the Monk-Seal, on land,-" It had a very acute hearing, since even at a distance it never failed to obey or respond to its master's voice; and thus Captain Scoresby,-"Seals appear to bear well under the water; music, or particularly a person whistling, draws them to the surface, and induces them to stretch out their necks to the utmost extent. as to prove a snare by bringing them within the reach of the shooter." And Weddell,-" Their sense of hearing is acute, and also their sense of smell." It is on account of this last sense, that the Greenlanders always endeavour to approach them against the wind. And were we to judge of their taste by the keenness with which they relish their food, few animals possess it in equal perfection. The greatest gourmand's teeth do not water at the anticipation of the richest feast, as do theirs in expectancy of their common food. "A copious saliva," says M. F. Cuvier, " and flows from their mouth during deglotition, and not less so the moment the Seal perceives its prev. **

[·] Mammif, Sept. 1619, p. 5.

In a group we extensive as these Amphibia, the only correct method of coming to a knowledge of their habits and mental powers and dispositions, is by minutely considering the propensities of each distinct species; and for details we must therefore refer to the subsequent part of the volume. In the few remarks which follow, all that we can attempt is a very short and hasty sketch.

It is frequently stated in modern works, that it is not established whether Seals frequent inland seas, such as the Caspian, or fresh water lakes, such Lake Baikal; which doubts are grounded chiefly upon supposititious difficulties as to the mode of their introduction into these detached and dreary waters Peron especially, although we believe we must also add Lesson, and after them Dr Prichard, treat the opinion as altogether apocryphal and absurd. We cannot, however, but regard this as an error, the result of false reasoning, and insufficient care. Nothing can be more specific than Steller's statement that they frequent the Caspian, and the fresh water lakes, Baikal and Oron, which have no direct communication with the sea;† and nothing more circumstantial, and apparently correct, than Pallas' account, from personal observation, of these animals, in both these ____ The insinuation, that the creatures seen might be otters, is quite gratuitous, and cannot stand against the express testimony

Prichard's Researches into the Phys. Hist. of Man, 3d Ed. i. 63, 65.

⁺ De Bestiis Marinis, Nov. Com. Petro, t. ii. y 290.

of the most eminent Naturalist of his day. When discoursing about the Caspian, Pallas states the particular situations in which he had ____ them, and the spots which were famous for the numbers which they harbowred. We shall quote a few words. "Seals sometimes ascend the Jaik or Aural in winter. Many have been killed both on the banks and inlets. The Seal of the Caspian is much fatter in autumn than those of the Baltic which I have seen. They appear more like a skin with oil than an animal, m you can scarcely recognise their head and fore paws for the fat. Their skin and blubber are taken to Astrakan, which supplies the oil throughout the Empire." He is equally specific respecting the Seals of Lake Baikal, as will appear in the sequel. These statements leave, we think, - room for scepticism; and they might be multiplied by additional quotations from Anderson and others.† Bearing upon a somewhat similar point, we add the following fact:- "Lochaw, in the parish of North Knapdale, abounds with plenty of salmon, and the Seals come up from the ocean through a very rapid river, in quest of this fish, and retire to the at the approach of winter."1

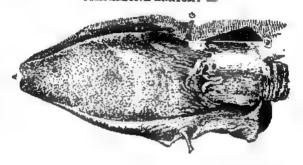
Most of the Seals pre-eminently gregarious. Seldom are they seen except in flocks, amounting sometimes to hundreds, and in some instances even to many thousands.

Voy. de Pal. t. i. pp. 674, 680-2.

[†] See Anderson's Iceland, t. ii. p. 169.

³ Statist. Acc. vi. 260.

It is also deserving of remark, that they are decidedly migratory in their habits, the great stimulus to which appears to be the change of temperature. Very many are, from choice, inhabitants of the margins of the frozen towards both poles. But the line of the margin varies much with the season of the On the approach of the Polar winter they emerge from its dark and dreary solitude towards milder regions, and during the winter months select a moderate temperature, where they are occupied with the all-important work of parturition. Their period of gestation is considered to be nine or ten months, and their progeny never exceeds one, or at most two, a time. In the herbivorous Cete the mammæ are pectoral, whilst in the amphibia they are ventral. Their number, in species of Seals, is said to be two, and in others four; the teats lie concealed in the skin, an defending them from the exposure arising from their crawling when on land. Thus placed, the nipples are seized by the young with more difficulty than is usual; and to assist them, it has been alleged that the tongue has received that bifurcated termination, which is seen in the margin, which is a curious feature in many, if not all Seals, and is, we believe, men conspicuous in them than in any other of the Mammalia.



The important work of lactation and procreation accomplished, with the returning spring the Seals again resert to their mean distant and almost impenetrable icy haunts, where, in that deep solitude which they love, and almost removed from human ken, they spend their time in a way with which it is not easy for me to become familiar. The regularity with which these migrations me accomplished is often remarkable; and is thus alluded to by an ancient Poet:—

Whon they the approaching time perceive,
They fier the deep, and watery pastures leave:
On the dry ground, far from the swelling tide
Bring forth their young, and on the stores shide,
Till twice six times they see the Eastern gloums
Brighton the hills; and tremble on the atreums.
The thirteenth morn, soon as the early dawn
Hangs out its erimson and or apreada its laws,
No more the fields and lofty coverts please,
Each bugs her own, and hastes to rolling

The uniformity and power of this instinct are strongly set forth in the following extract:—" In the beginning of Jone," says Crantz, " they come back, young and all, like a flock of sheep. They would to observe the certain fixed time, and track, like the birds of passage, and take route that is free from ice; therefore the ships from Spitzbergen freely follow them. We pretty well ascertain the day at the end of May when they will be again Frederick Hope; and in the beginning of June at Good Hope, and so further north."

Another interesting particular in regard to their migrations is, that, like ____ other migratory creatures, and sepecially birds, they ally affect particular spots, where, having once been located, they will always in preference return, and will scarcely leave, though beset with many and great dangers. Thus in some desolate recess of the ocean, if fifty islets be grouped together in nearly apparent uniformity and sterility, it will often be found that the Seals habitually resort and crowd upon two two three favoured ones, to the complete neglect of all the others. We do not venture to say that they, in their wisdom, have not some good reason for this, though hithertoit is unascertained. Occasionally it has been observed that in grown of these resorts there is a stream of salubrious water, which, if not quite essential, is yet an object of first-rate importance to them, and possibly in every instance there is more equally satisfactory for their choice.

Greenland, p. 129.

These immense herds are usually composed of one and the species, though it sometimes happens even various genera resort to the shore island, and thus greatly increase the numbers of the assembled thousands. In this instance, however, each species generally keeps itself detached from the others; and knowing well its own strength weakness, carefully avoids all circumstances which would lead to hostile encounters, that they all live in proximity, without collision, if not in harmony and peace.

If now proceed examine the individual groups, we shall soon perceive that there - marked peculiarities presented by them respectively. This fact can be adequately illustrated only by a particular survey of each, such as me hope to supply in the body of the work; and in this place ____ exhibit the fact only by a single statement respecting the Walrus, and some of the families of the larger Seals. The Walrus monogamous, and, though associating in immense groups, yet generally is a peaceful and harmless creature, living in concord each with his fellows, and interfering but little with its congeners. When, however, they are attacked by foes, and seem especially by man, their eruel persecutor, then all the mutual kindof their disposition is called forth; they readily defend and support each other; they fearlessly proceed to the rescue of their unfortunate associate. and will contend for his deliverance, to their great detriment, and death. The Sea-Lion, again, (Otaria jubata,) an animal of equal dimengions and power, is a polygamist, and exhibits in strong colours the penalty which naturally results from this characteristic. At a particular season of the year, every male, inflamed with lust, and iealous almost his shadow, lords it over his hawith more than Eastern despotism, and thereby throws the whole community into m state of the highest excitement and agitation. During this period, which continues for months, many | jealous Bashaw, these animals have not inaptly been designated, engages in fearful strife with a rival; the contest is often long and obstinate, well most sanguinary and fatal. Nor does it end with these doughty champions. Other males imagine that their interests are involved, or their rights invaded, and the strife spreads from family to family. till at length the whole community is involved in one general melée of passion and rage, of fierce cries and groams, of blood and death; and, after all, short is the triumph of the conqueror, and deep and poignant the chagrin and malice of the vanquished.

Originally, and therefore we are disposed to hold that naturally, these Amphibia, far from having a dread, have rather a reposing confidence in When a young one by any accident is separated from its parents, and comes in contact with man, instead of shunning it courts his company; it will follow him, and if the finger be held out, will suck it like many domestic animals. Through the kindness of Professor Trail, we can illustrate this trait in

their mental constitution, by interesting incident of which he was a witness, and which, with several other anecdotes, ___ can, through his polite attention, record in his words. - " A little islet in Orkney, called the Holm of Papa Westray, had long been a favourite haunt of numerous Seals, which had become more than usually tame from the of the proprietor of the adjoining island to prevent their being molested. On visiting that gentleman in 1833. I found the Seals exhibited their wonted confidence in those who approached their protected haunt. Several of them swam along the shore me party of six or eight persons walked along the beach, and did not in general keep farther from than thirty or forty yards: when we turned, did they, and when we re-entered our boat, they followed it in the payrow channel that divides Holm from the island of Papa. Seals are said to relish music, and Seal-hunter once informed that the sound of a finte will aliare them to a boat; but in the above instance it was merely the consequence of gun being ever lifted against them in that islet, which has won their confidence in man." Nor is this characteristic less strikingly exemplified by observation made by Mr Dunbar, the present incumbent of the parish of Applegarth, during his residence, at a former period, in an of the Hebrides, In a letter to Mr Lizars, which appeared in the last volume of the Naturalist's Library, we find the following statement :- "While my pupils and I were bathing, which we often did, in the bosom of a

beautiful bay in the island, named, from the circumstance of its being a favourite haunt of the animal. Seal Bay, numbers of these creatures invariably made their appearance, especially if the weather am calm and sunny, and the sea smooth, crowding around at the distance of a few yards, and looking if they had kind of notion that we some of the same species, or at least genus, with themselves. The gambols in the water of my playful companions, and their noise and merriment, seemed, to our imagination, to excite them, and to make them course round with greater rapidity and animation. At the same time, the slightest attempt on part to act on the offensive, by throwing at them stone shell, was the signal for their instantaneous disappearance, each, as it vanished, leaving the surface of the water beautifully figured with wavy succession of concentric circles." Nor must it be supposed that it is only the inhabitants of these isles that are thus amiable; the ____ character belongs to some of their antipodes, as mentioned in the following statement of the missionary Cottaneo. "Near the island of Lobos, in the river Plata, Sea-Wolves appear in vast multitudes; they meet the ship, and will hang to the sides by their paws, and to stare at and admire the crew; they then drop off, and return to their haunts." And, more, Weddell remarks,-" When if first visited South

First Letter of the Missionaries of Paragnay, apad Pennant, Br. Quadrumeds.

Shetland, the Seals had me apprehension in meeting man."

In the previous paragraph allusion is casually made to the notion that these animals not indifferent to the charms of music: whilst we believe it may be safely affirmed that this assertion is more frequently made than credited. The statement, however, appears to be perfectly correct; and the following quotations, the former from the celebrated Orkney Naturalist, Low, and the latter from Mr Dunbar just quoted, are sufficient to banish all scepticism on the point. "If people are passing in boats, the Seals often come close up to them, and stare at them, following for a long time together; if people are speaking loud they seem to wonder what may be the matter. The church of Hoy is situated near a small sandy bay, much frequented by these creatures; and I observed, when the bell rang for Divine service, all the Seals within hearing swam directly for shore, and kept looking about them, as if surprised rather than frightened, and in this manner continued to wonder as long as the bell rang."* And again, Mr Lizars' correspondent.-"The fordness of these animals for nusical sounds is a curious peculiarity in their nature, and has been to moften subject of interest and amusement. During a residence of vears in of the Hebrides, I had many opportunities of witnessing this peculiarity; and, in fact, could call forth its

Fanna Oreadensia.

manifestation at pleasure. In walking along the shore in the calm of a summer afternoon, a few notes of my flute would bring half within thirty or forty yards of me; and there they would swim about, with their heads above, water, like many black dogs, evidently delighted with the sounds. For half - hour, or, indeed, for any length of time I chose, I could fix them to the spot , and when I moved along the water edge, they would follow me with eagerness, like the Dolphins who, it is said, attended Arion, as if anxious to prolong the enjoyment. I have frequently witnessed the same effect when out on m boat excursion. sound of the flute, or of common fife, blown by one of the boatmen, sooner heard, than half a dozen would start up within a few yards, wheeling round as long as the music played, and disappearing, one after another, when it ceased."*

But, however much these Amphibia may naturally feel disposed to repose confidence in man, yet, if exposed to bad treatment, they soon acquire the habit of suspecting and shunning him, and of counteracting the danger resulting from his wiles. Their thus learning caution from experience will be frequently illustrated in the sequel; while in other instances it would appear that their watchfulness, if not a natural instinct, is a precaution which has become perfectly habitual to them. Denis says, the Seals in landing always place mentinel; and Scoresby states, they are extremely watch-

Nat. Lib. vii. p. 204.

ful. "Where mumber are collected on the piece of ice, if not more is always looking round; and even solitary Seal is scarcely ever observed to allow a moment to pass without lifting its head. He adds, where Seals rest - an extensive sheet of ice, they always secure their retreat either by lying near the edge, or by keeping a hole in the ice always open before them. These precautions - necessary to prevent them becoming prev the Bear. The old animals are in general shy; m that, when thousands are seen within the compass of a square furlong, on the approach of a boat, the whole will perhaps make their escape. The young are less guarded, and when met with at the proper season, may sometimes be killed by the dozen at ■ time, on a small flake of ice."*

But not only do these Amphibia quickly learn the most watchful circumspection; it is true, that, when surprised by man, and forced to engage in actual combat, though the aggressors, many of them, for it is quite the reverse with others, show the coolest and most determined courage. This is amply illustrated in the following pages, and especially with regard to the Sea-Horse. To excite attention merely to the point, we shall here introduce sketch from the great painter of Nature of our time, who probably narrated only what had actually come within his cognisance. "The Seal, finding her retreat intercepted by the light-footed soldier, confronted him manfully, and having

Loc. cit. 511.

sustained a heavy blow without injury, she knitted her brows. . the fashion of the animal when incensed, and making at at of her fore-paws, and her unwieldy strength, wrenched the weapon out of the assailant's hand, overturned him the sands, and scuttled away into the sea without doing him any further injury. The captain, a good deal out of countenance in the issue of his exploit, just in time to receive the ironical congratulations of his uncle, upon a single combat, worthy to be commemorated by Ossian himself.- 'Since,' said the Antiquary, 'your magnanimous opponent bath fled-from the foe that was low.' In truth, she walloped away with all the grace of triumph, and has carried my stick off also, by way of spolia opima."

When the animal has been captured, and is forced to remain on land, there is the greatest contrast presented to all this activity and sagacity. To such extent is this the case, that it suggests the idea that sometimes they an almost in the drowsy state of hybernating animals. Buffon remarks of the Monachus which he examined, "It slept frequently during the day, snoring so loud that it was heard at considerable distance. When askeep it could be roused only with difficulty; and when drowsy, would promptly attend his master." And to authority, whose loss Zoologists have lately been called to deplore, "—
"They have a great tendency to repose; sleep

[•] Er. Cuvier.

throughout the live-long night, and during the day

It | frequently stated in general terms, that Seals are estily tamed; but this assertion must be taken with limitation, since, though true of some, it is equally untrue of others. The fact is, Seals differ as much in disposition as in form; and as with dogs and other animals, whilst some species easily and almost naturally domesticated, others as uniformly show themselves fierce, savage, and picious. Some of the more species, however, not only easily tamed, but become the attached and almost the amusing companions of man. Many instances of this will be found in the following pages; and frequently are they carried from city to city, not only that their peculiar structure may be seen, but that their intelligence and quirements may be exhibited. All who have into contact, or taken trouble with these animals, and familiar with these facts, at that here subjoin but one w two statements concerning it. Thus Pliny,-" Vituli marini accipiunt disciplinam, voceque paritur et visu populum salutant : inconditu fremitu nomine vocatu respondent."* "I have lately," says M. F. Cuvier, "had occasion to witness - Seal which displayed much intellectual power. He did punctually what he man ordered. If desired to raise himself on his hind-legs, and to take a staff in his hands, and act the sentinel, he

Hist. Nat. | ix. Cap. 13.

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he likewise, it his keeper's bidding, would lie down on his right side, or me his left, and would tumble head over heels. He would give you either of his paws when desired, and would extend his sweet lips to favour you with a kiss. He complied immediately with the wishes of his master, to whom he appeared to be peculiarly attached."* And more, to quote the lively and intelligent Dr Hibbert:-- " The Phrenologists, from the form of the cranium, have hazarded the opinion that the Seal is possessed of uncommon intelligence. I am confirmed in the notion from a different kind of observation. These animals, if taken young, easily domesticated, when they assume the habits of a dog, showing attachment to particular individuals of the human race, repairing to the water in quest of fish, and returning to the roof where they have experienced kindness."

Before proceeding to make the few remarks which imits allow, im the valuable products derived from these animals, would say a word or two upon their capture. They are exceedingly tenacious of life, and many cruelties have been perpetrated upon them, which most who have witnessed declare to be too horrible for description, and over which we willingly draw a weil. If life is to be sacrificed, there is a right way of taking it as well as a wrong, and we insist that the former should be followed, and the latter avoided. Before, however, enter-

ing upon this topic, take leave to remark, that it is impossible to investigate = in have done the natural history of these animals, without discovering how much their centure has been made a of amusement, and, at it is familiarly, but emphatically, called, of sport. We to denounce such sports both indefensible and wrong. Animals have been given to provide for the necessities and comforts of but not that he may gratify himself with their dying agonies; and he is wholly inexcusable if even here he breaks the golden rule of doing me he would be done by. Sporting with the feelings, and pains, and lives of these greatures, has a strong tendency to lead to cruelty and wickedness; and, therefore, this inherent tendency should be checked in the bud, and invariably opposed. When we witness, says Peron, a thoughtless sailor hastening for his amusement, club in hand, into the midst of great herd, and surrounding himself with their dead bodies, we not but sigh over this improvidence and cruelty, which lays low many peaceful, gentle, and unhappy beings.

When within their proper bounds,
And guildless of offence, they range the air,
Or take their pastime in the spacious waste,
There they are privileged; and in that hunts
Or harms them there is guilty of a wrong,
Disturbs th' economy of Nature's realm,
Who, when she formed, designed them an abode.
Distinguished much by reason, and still more
Hy mm especity of grass Divine,
From waste,

Which, having served us, perish, us are limit.
Accountable; and limit some fature day
Will reckes with us roundly for the abuse
Of what He decays to mean or trivial trust.

Some instances will be recorded in the following pages of the awkwardness and difficulty which was often experienced in putting speedy end to the

sufferings of these poor animals. We shall here quote but we example: "We many battles," says Byron, " with these Amphibious creatures, the killing of of which was frequently an hour's work for six men." It is of this men animal that Weddell says, it is now to man, acquainted with the practice, the work of three minutes; but without stabbing it to the heart, or fracturing its skull, the feat is truly difficult. By the regular fishers a lance of 12 or 15 feet is used for the larger species, the blade of which is about two feet long. With great address they seize the when the animal raises his left fore-paw advance, and plunge their weapon to the heart. And see Scoresby,-"The capturing of a Seal is but the work of a moment. A blow with a Sealclub (a representation of which me here supply) on the nose immediately stuns it, and affords opportunity of arresting flight, and making prize of many at time." The existence of this tender point well known to the ancients, and is thus expressed by Oppian:—

Non hami penetrant phocas, sevique tridentes In caput ineutient, et circum tempora pulsant. Nam subits percunt capitis per voluera morte.

When Seals we observed to be making their escape into the water, before boat reaches the ice, the sailors give loud continued shout, which their victims are sometimes deluded by the amazement of a sound so uncommon, and delay their retreat until arrested by the fatal blows of their enemies.

Such are the expedients had recourse to among civilized nations; and shall now advert shortly the methods practised by the rude tribes in the neighbourhood of the pole.

The Greenlanders have three ways of catching Seals; either individually, each in "his bubble of a boat;" or in company, by the Clapper-hunt; in in winter on the ice. As the first method is chiefly practised against that was which is styled the Greenland-Seal, such shall postpone its description till to the account of that animal. The other methods are practised indifferently against all kinds of Seals. The Clapper-hunt, as it is called, is prosecuted by numbers in concert. As the natives were on the watch, so soon as they discover herd, driven, usually by stormy weather, into some

creek inlet, they endeavour to out off their retreat, and frighten them under water by shouting, clapping, and throwing stones. As, however, they must speedily come to the surface to respire, "they persecute them again till they me tired, and all last obliged to stay long above water, that they surrounded and killed by long and short lances. During this hunt we have a fine opportunity of sewing the agility of the Greenlanders, or, if I may call it so, their hussar When the Seal rises out of the water, they if fly upon him if they had wings, with a desperate noise; the poor creature is forced to dive again directly, and the moment he does, they disperse again m fast as they came, and every sives heed to his post, to where it will start up again, which is muncertain thing, and commonly three-fourths of a mile from the former spot. If the Seal has m good broad ter, three or four leagues each way, it can keep the sportsmen in play a couple of hours before it is so spent that they surround and kill it. If in its fright it retreats to land, it is welcomed with sticks and stones by the women and children, and presently pursued by the men in the rear."4

Several methods are taken to kill Seals on the ice. As they frequently themselves make apertures

[&]quot; Crantz. Greenland,

in the ice for breathing, the Greenlander with himself, on stool, putting his feet on board, to



keep them from the cold. "Now when the Seal comes and puts its nose | the hole, he pierces it instantly with his harpoon, then breaks the hole larger, and draws it out, and kills it quite. Sometimes, again, if the Greenlander and a Seal lying near its hole upon the ice, he slides along an his belly towards it, wags his head, and grunts like a Seal, and the poor animal, thinking it is an of its innocent companions, lets him enough enough pierce it with his long lance." A third device will be found, from Pallas's Travels, in account of the Hare of the Sea, or Leporine Seal; and the only other method we particularize is that mentioned the authority, as practised in Lake -- "At Zivovia we meta number of individuals going a Seal-hunting. This fishery is farmed out, and

is pursued chiefly in April. The Seals congregate in numbers in winter in the neighbourhood of rapid rivers and hot springs, where the ice is broken, to which spots they resort, and bask or sleep in the sun. The hunters are quite familiar with these places, and put themselves into alight sledges, on which they hoist a white sail. The Seals, taking this for a floating island of ice, are not alarmed, and approach. They are thus surprised and shot, and many are captured.

While thus the greatest, and, me fear, often the cruelest, enemy of these Amphibia, it is not to be forgotten that he is the only On land their chief foes, and especially of the Walrus, the Polar Bears I and between these animals there are often dreadful contests; the Walrus being usually victorious, at the same time carrying away many fearful scars, the tokens of his triumph. In the ocean many of the formidable species of Whales ever making bloody and successful against all kinds of Seals. The following curious information is given by Peron respecting the Great Sea-Elephant: The fishers state that they a these Seals ascend from beneath the _____ in the greatest apparent alarm, many of them covered with wounds, and dveing the water with their blood. Their panic concurs with their wounds in proviz , that they have been hunted by formidable foes. The fishers unanimously agree that they know no animal which

Voyag. Pallas, t. iv. 136.

could make such formidable wounds, and therefore presume that these monsters dwell far from the coasts; whilst they me the same time allow that they have not otherwise been able to detect any trace of them." Nearer home, they have similar mies, and we are happy here to add a valuable note from Dr Trail's manuscript :- "In 1833, I inquired for my old acquaintances the Seals of the Holm of Papa Westray, and men informed that, about four years before, they had totally deserted the island, and had only within the last few months begun to reappear. The seeming and of this migration the attacks of powerful ravenous inhabitant of the ____ My friend informed ___ that in 1828 or 1829, he had found the bodies of more than a dozen of Seals completely divided through the middle, as if by a bite, drifted shore. It almost in every instance the portion next the tail that found, and the appearance of these fragments showed that the body of the animal had been cleanly cut through, as if by the single stroke of the monstrous jaws of species of shark." It has, moreover, been observed that these creatures muliject to very fatal epidemics. "About fifty years ago, multitudes of their were cast ashore in every bay in the north of Scotland, Orkney, and Shetland, and numbers found at in a sickly State."*

Without in the slightest degree depreciating the

Fleming, Brit. An. p. 17.

products of these animals, which have become regular articles of commerce, and contribute to the elegancies and refinement of polished society, it is yet interesting to reflect that they we even still more essential to those hardy tribes of our fellowmen who spend their fleeting and chequered day within the limits of the Arctic Zone. To them they indispensable, for the sea is their corn-field, and the Seal-fishery their most copious harvest. "Seals," says Crantz, "are meedful to them than sheep me to us, though they supply us with food and raiment, or than the cocoa-tree to the Indian, although it presents him with and clothing, houses, and ships; so that in case of necessity they could live upon them alone. The Seal's flesh supplies them with palatable and substantial food; the fat is sauce to their other aliment, and furnishes them with oil for light and fire, while at the same time it contributes to their wealth in every form, seeing that they barter it for all kinds of necessaries. They better with the fibres of Seal's sinews than with thread mailk; of the fine internal membranes they make their body raiment, and their windows; of the skins they make their buoys, so much used in fishing, and many domestic utensils, and, of the kinds, their tents, and their boats of all sizes, in which they voyage and seek provisions a therefore," continues Crantz, "no man can pass for a right Greenlander who cannot catch Scale. This is the ultimate end they aspire at in all their device and labour from their childhood up. It is the only art, in truth it is a difficult and dangerous one, to which they are trained from their infancy, by which they maintain themselves, make themselves agreeable to others, and become beneficial members of society." Concerning the Southern hemisphere, a recent voyager tells us, that the inhabitants of Terra del Fuego wery expert cutting the blubber from Seals, and not less a stealing and eating it.

So much for the opinions entertained by the inhabitants of the Polar regions regarding the Seals at article of food. A corresponding estimate is made of the herbivorous Cete all the world over. Wherever they are found, whether in the West Indies or the East, in Africa or America, they are considered as probably superior to any other kind of animal food. The prevalence and grounds of this opinion will be stated in a subsequent part of this volume.

No products of the Amphibia, however, are, upon the whole, man valuable than the oil and skins. The oil obtained both from the Walrus and Seals is of a quality superior to that of the Common Whale, and brings a higher price. It yields oil, says Scoresby, speaking of the Sea-Horse, which, when extracted before putrefaction has commenced, is beautifully transparent in appearance, free from smell, and not unpleasant to the taste. Soon after Captain Cook's voyage, in the Resolution, in 1771, he presented mofficial report concerning New Georgia, in which he gave an account of the great

number of Proboscis Seals and Fur Seals which he had found in the shores of that island. This induced several enterprising merchants to in out vessels to take them, the former for their oil, the latter for their skins. Captain Weddell states that he had been credibly informed, that during period of about fifty years not less than 20,000 tons of oil in procured annually from this spot alone for the London market; a quantity which, in moderate price, would yield about L.1,000,000 a year.

The skins, as make seen, we very much used in their state as articles of apparel by the tives of the Polar Zones. When tanned, they them extensively in making shoes; and the Esquimaux have process by which they render them waterproof; so that, according to Scoresby, the jackets and trousers made of them by these people great request among the whale-fishers, for preserving them from and wet. But the skins are not only used in this and tanned leather; on account of their silky and downy covering, they constitute still men important articles nected with the fur trade. Thus considered, Seals' skins are evidently of two kinds, which may be distinguished a kair-skins and fur-skins. The former are used for clothing and ornament by the Russians, Chinese, and other nations, and the latter yield a fur which, an believe, exceeds in value all others which have been brought into the market. Many Seals supply nothing but hair, whilst others, in different proportions, produce both the hair,

derneath it a soft and downy fur. The majority, we believe, to be considered merely hairskins, similar the bear sable; and of these excellent of their kind, and much prized.

But the finest of the hair-Seal-skins yields in value and importance to the other variety, the fur-Seal-skin. This fact I thus alluded to in the last edition of the Encyclopædia Britannica:--- From about the year 1806 mm 1823, mm extensive trade was carried on in the South Seas in procuring Sealskins, which in that part of the world covered with a fine for. These potained in vast abundance by the first traders, and yielded a very large profit." The remark make just made that hair and fur are frequently both present, is applicable to the fur-Seals, as to the others. But the question here occurs, which me the fur-Seals? and that intelligent mariner we have so often quoted, and who so largely engaged in this trade, declares that Naturalists know nothing about it. Mr Weddell invariably speaks of the for-Seal as one species (the Falklandica) distinct from all others. He remarks,-- "The circumstance of its possessing a valuable for has not been noticed in any description of the Seal with which I have met," (pp. 137, 142.) We have probably, on this point, made a somewhat more extended survey of the works of Naturalists than intrepid sailor could do, and examination quite corroborates his. We have not discovered that this, or any other species, has been distinguished

for the peculiar excellency of its fur; and for more ample details on this point refer our readers to chapter upon the Otaria Falklandica, and also to more extended paper on the subject which will be found elsewhere: simply remarking, that it is matter of considerable national importance. The time was when cargoes of those skins yielded five six dollars ■ piece in China; and the present price in the English market averages from 30 to shillingst per skin. The number of skins brought off from Georgia cannot be estimated at fewer than 1,200,000; the Island of Desolation has been equally productive; and in addition to the vast sums of money which these creatures have yielded, it is calculated that several thousand tons of shipping have annually been employed in the traffic 1

But whilst we indulge the hope that we may have done were little service by exciting attention to the source of this fur, and publishing the first representation of the animal which yields it, that has, as such, seen the light, yet we we far from being satisfied that much does not still remain to be done. It is a curious fact, that whilst the Americans for many years most successfully prosecuting this trade, England was not profiting by it, and though quantities of the fur-Seal-skin brought home, "the furriers in England and not the method of dress-

Weddell, 54.

Manuals of Natural History, No. for October 1638, Vol. II. 81.

[†] Encyclop. Brit. Last wol. z. p. m.

ing them; on which account they were of so little value to be almost neglected." Now, the inquiry here suggests itself,—If there time when artizans could not, and not, dress this skin when put into their hands, and when Naturalists knew little or nothing specifically about the true fur-Seal, may it not happen that there me other Seals whose fur is really waluable, and which might now be turned to a similar profit? In a secount of the Falklandica, we have given a description of the method by which the fur-Seal-skin is prepared, apparently sufficiently simple; and we have, moreover, given the opinion of meminent Naturalist, (an opinion in which me could not concur,) that the Uraine Seal is the true source whence this valuable product is derived. But be this as it may, the following should not be overlooked, viz. "That the Americans regard many Seals fur-Seals, which are unknown to Naturalists, and quite distinct. Thus, according to them, the fur-Seal of Patagonia has a bump behind its head; that of California is of very large dimensions; the Upland Seal, that which retreats far from shore, is small, and exclusively inhabits the Macquarrie Islands and Pennantipodes; and, finally, that of the South of New Zealand has other and distinct characters."† The truth then may be, that many Seals produce, in high perfection, that article which is

[&]quot; Weddell, 53,

t Lesson, in Dict. Class, t. xiù.

so much desiderated, and would yield so rich a return.

It may be considered superfluous to read | lecture to the trader upon a so nearly touching his interest; and yet the time there is one point which forms messential part of subject, that we cannot withhold word wo. These valuable creatures have often been found frequenting some sterile islands in innumerable multitudes. By way of illustration, shall refer only to the Fur-Seal, - occurring in South Shetland. On this barren spot their numbers were such that it has been estimated that it could have continued permanently to furnish a return of 100,000 furs ween; which, to say nothing of the public benefit, would have yielded annually, from this spot alone, a very handsome sum to the adventurers. But what do these men do? In two short years, 1821-2, m great is the rush, that they destroy 320,000. They killed all, and The moment an animal landed, spared ____ though big with young, it was destroyed. Those on shore hikewise immediately despatched, though the cubs man but a day old. There all died, their number, at the lowest calculation, exceeding 100,000. No wonder, then, that the end of the second year the animals in this locality were nearly extinct. So is it, = add, in other localities, and so with other Seals; so with the Oil-Seals, and so with the Whale itself, every addition only making had And I this might easily be prevented by a little less barbarous and revolting cruelty, at a little more enlightened selfishness. Fishermen are by law restrained as to the size of the meshes of their net in taking many of the more valuable fish; and in the Island of Lobos, in the River Plata, where, we have seen, there are quantities of Seals, their extermination prevented by the Governor of Monte Video, who farms out the trade under the restriction that the hunters shall not take them but at stated periods, ages, &c. We could enlarge on this point, but our exhausted space forbids.

The Seal-fishing in the Northern hemisphere has never been prosecuted with any energy by the British. The ships which are fitted out for the Whale-fishery occasionally obtain from 2000 to 3000 Seals, and sometimes more, and vessels sent out for the Seal-fishery alone, and which seldom amount to more than or two annually, have occasionally procured a cargo of 4000 or 5000, yielding nearly 100 tons of oil. From the Northern parts of Europe, however, and sepecially from the Elbe and Weser, there frequently upwards of fifty sail despatched. In a good Sealing year the number captured off the coasts of Newfoundland has amounted to many hundreds of thousands. The trade is of much hazard, and leads to

By a newspaper paragraph, (July 1838,) = perceive that nine vessels were this season employed on the Greenland Scalfishing; they procured about twenty Whales, and nearly 40,000 Seals. Most of the vessels belonged ■ Scotland, and more especially ■ Peterbead.

perils and adventures not less disastrous and exciting than the Whale-fishery itself. In on these manner and dwell.

With regard to the Seal-fishery of the South, the English and Americans have exclusively divided it between them, and with very great profits. It has lately been stated that they together employ not fewer than sixty vessels in the trade, of from 250 tons burden. These vessels an strongly built, and have each six boats, like those of the whalers, together with a small vessel of forty tons, which is put in requisition when they reach the scene of their operations. The consists of about twenty-four hands; their object frequently being to select a certain fixed locality, from which they make their various battues. Thus it is very common for the ship be moored in some secure hav, and be partially unrigged, whilst, we the same time, the furnaces, &c. required for making the oil, placed shore. The little cutter is then rigged and manned with about half the crew, who sail about the neighbouring islands, and send few hands shore when they Seals, or where they wish to watch for them. This vessel can hold about 200 Seals, rudely cut up, which will yield about 100 barrels of oil: this is transported head-quarters and melted. The campaign frequently lasts for three years, and in the midst of unheard-of privations and dangers. Some of the crew me sometimes left distant barren spots, and the others being driven off by storms, they are id to perish, w drag to for years a top precarious and wretched existence.

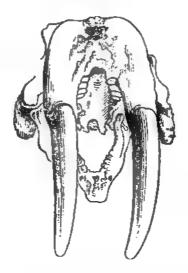
On the subject of classification pot enter into any extended statements. The Amphibious | the third tribe, of the third family, Carnivora, of the third order Carnassiers of Baron Cuvier and comprehends the Walrus and the Seals, a very natural group, which has been designated the Phocacious group, or the Phocacea. Originally all the Seals were included under one genus; but me their number, and ascertained differences, increased, it was suggested by Buffon that they should be divided into two groups; it having been observed that some of them had mexternal ears, whilst others possessed of these appendages. Peron carried this suggestion into tion, and proposed the Otary for the latter division, in which he has been followed by most Naturalists, and amongst others by Baron Cuvier, who remarks-" The Otaries of Perop differ in several particulars from the Seals properly an called, independently of the small conche at their ears." This distinction accordingly will be observed in the following pages. M. F. Cuvier, after having very carefully re-examined the group, and finding marked differences in the dental apparatus, proposed a arrangement, grounded mainly thereupon. He demonstrated that the Seals may be divided into many generic groups, characterized by organic modifications, not less marked than those which distinguish the most natural genera; and added.

that their characters elevate them into the rank of m order, according to the prevailing minciples of classification. "Far," says he, "from forming only natural genus, they constitute distinct order, which is composed of many genera, which comprehend species." We estimate highly the value of M. Cavier's labours in this department, and believe that he pushed his discoveries as far as it was possible = the time. We think his arrangement will probably be adopted, and, accordingly, after the example furnished by the Règne Animal, we will indicate it - we proceed, without, however, abandoning the simpler division of Peron. Having thus stated the simple arrangement which we mean to follow, we now add, that Dumeril places these animals in his family but one of the Mammalia, immediately before the Whales, and Latreille, in his Fa-Naturelles du Règne Animal, makes them his order, that of the Amphibia, the first family of which is the Seals and Otaries. Of all our modern Naturalists, however, we believe that Professor Nilsson, of the University of Lund, is the individual who has assiduously devoted attention to this difficult department of Zoology. work is speedily expected; and it is confidently anticipated that much of the doubt and confusion which still envelope the subject will then be moved. We regret that we have not been able ...

Mammifères, 1824.

avail ourselves of his valuable researches, our task would have been greatly facilitated, treatise rendered more valuable complete. Along with this regret, however, we are unwilling to forego the hope that our protracted and independent, though feeble efforts, have thereby been rendered additionally productive, and that have thus been enabled contribute to enhance the interest, and elucidate the difficulties, of the subject.





THE WALRUS, OR SEA-HORSE.

We must our account of the group of the Amphibia with that animal, which, though neither the largest, nor perhaps the most remarkable, yet cannot be regarded without wonder and astonishment. Its cranium is quite unique; and this remarkable portion of the Osteology, including the dental apparatus, has received great prominence in the classification of its congeners, we prefix representations originally published by Daubenton, and which little need be said. Tepresents the peculiar shape of the head, the most remarkable part of the animal. Will at once be observed, that the strange

shape of the upper jaw depends upon the sockets, which receive the great tusks, and remind us of the Elephant. It will also be noticed, that the lower jaw shuts in between these tusks, and = rests upon the upper ____ The great sockets are placed between the nostrils and the orbit, the rim of which wanting for nearly one-third of its circumference. The cranium itself is not large; but its processes are well marked, serving for the insertion of the powerful muscles which was the head. The position of the grinders, and their shape, - here also seen, four on each side of each jaw, which, with the two tusks, makes eighteen in all; the grinders are small. Cuvier adds, that between the tusks two incisors, shaped like molars, which the generality of writers have not yet recognised to be incisors; between these again are two small and pointed in young individuals.*

In the preceding volume of the Naturalia's Library, (Mam. v. 7th.) im friend Mr Mac Gillieray having supplied, from the cranium of a young Walras, in the Museum of the Royal College of Surgeons, the first published description of the normal dentified of this animal, we subjoin it. In the skell of the young, there in the upper jaw three incisors in each side; the first inner extremely small, im second a little larger, and the third or outer disproportionately large, being equal in the largest grinders. The ensure tooth is displaced, being thrust outwards beyond in line of the other teeth; there in then five grinders, with single roots, the inverse small. In the lower jaw there are inverse were young lines of the upper jaw; if fith grinder also disappears, paper for the upper jaw; if the grinder also disappears, in appetimes the fourth.

THE WALRUS, OR SEA-HORSE.

Trichechus. - Linu.

PLATE L

Trichechus, Linn. Trich. Rosmarus, Gonel. Equus Marinus, Ray.

Morse of the Russians. Bête à la grande dent, of the French.

Walros, Egede, Crantz, Anderson. Walrus, Pennant, Scoresby, &c. Sea-Horse of the Whele-fishers, and sometimes Sea-Com.

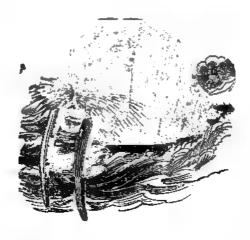
It has been well remarked, that the Walcus forms connecting link between the Mammalia of the land and those of the water, corresponding in of its characters both with the Bullock and the Whale. It is often seen of the size of great Ox, and sometimes exceeds the dimensions of the gigantic Elephant. Its distinguishing characters companying plate, taken from specimen in the Edinburgh Royal Museum, as perfect man perhaps as is to be found in Europe. The head, well proportioned the body, round and obtuse; the

eyes are small and brilliant; there - external ears, and the orifice is placed far back == the head: the nostrils large, somewhat round, and placed on the upper part of the snout. The most remarkable feature, however, in its countenance is its great muzzle, produced by the bony structure being accommodated for the reception of the tusks; these project from eighteen inches to two feet, and diverge at their points. The lips are remarkably thick, and covered with great pellucid bristles as big as a straw. The neck is short; the body, very bulky, is broadest round the chest, and diminishes towards the tail, which is very short. As a defence against the extreme cold, these animals have m hide that is from an inch to two inches thick. covered with close hair; and they likewise possess, like the Whale tribe, a coating of oily fat, with which their bodies are completely enveloped. Thus incased, they descend to the depths of the Arctic Seas, and repose upon their icy beds without inconvenience. The colour, according | Fabricius, varies with the age; the young are black; they then become brown, and gradually more and more pale, till in old age they become quite white. Their limbs are short, and of intermediate character between fins and legs; the inside of their paws me defended by a rough horny kind of coating, a quarter of m inch thick, which is probably produced by the hardening of the skin in quence of the usage they receive in climbing over the ice and rocks. The fore-paws, which

whole length of the animal from the snout; they are from two to three feet in length, and being expansive, they be stretched to a considerable width. The hind-feet extend straight backwards, and together form sort of tail fin; they not, however, united, but quite distinct from each other; their length approximates to that of the forepaws, and the termination of all the fingers and toes is marked by a small nail.

The common dimensions of the Sea-Horse from twelve to fifteen feet in length, with a circumference of eight or ten. Crantz states that it reaches a magnitude of eighteen feet in length, and nearly much in circumference; and Baron Cuvier states that it exceeds the bulk of the largest bulls, and attains a length of twenty feet.* The length of the tusks when cut out of the skull is commonly from fifteen to twenty inches, though they times almost thirty; and their weight is from five ten pounds, though it is noted that they have sometimes been found the double of this on the shores of the Icy Sea. They are not only useful to the animal in procuring its food, but also as a weapon against its foes, of which the Bear on land. and the Sword-fish at sea, are amongst the nimble and fierce; they are also employed in enabling animal to raise its unwieldy bulk upon the ice. to the shore is prevented.

Règne Animal, edit. 1829.



Though we have been somewhat full in our description, yet we do not deem it superfluous to append few sentences from the racy account of the Missionary Crantz—"The head is oval, but the mouth small that could not quite put my fist into it. On both its lips, and on each side of the nose, is kind of fungous skin, a hand's breadth, stuck with a plantation of monstrous bristles, that are a good span long, and as thick as a straw; they like a three stranded cord, pellucid, and give to the animal majestic though a grim aspect. The is very little raised, and the eye is not larger than of Ox's. I could perceive me eye-lid, and me I must first searching for the eye and temples, of Greenland boy pressed the skin, and out

the eyes; that I found I could squeeze them in and out the depth of an inch; from whence I might conclude that this creature I also a shelter for its eyes in stormy weather by drawing them into a safe repository. I could scarce find the little apparatus of the I Having sharp incisors, it cannot catch fish and chew them like the Seals; and the two long tusks or horns growing out of its face over the nose, and bending down over its mouth, as almost to barricade it up, the to be impediment than a help to it. The right tusk about an inch longer than the left, and its whole length twenty-seven inches; they stand about three inches asunder in the head, and nine at the extremities."

As we have no where noticed any differences pointed out between the male and female, it is probable that they are not considerable. The latter have four mamme, which are ventral; and they usually bring forth one, though sometimes two at a birth. Dr Shaw in his Zoology has figured two species of this animal, and inferred their existence principally from the differences in the representations given by Johnston and Captain Cook. Whilst do not venture to deny that there may be two varieties, yet as nothing like sufficient proof has hither to been afforded, we prosecute the subject as there were but one.

In the very young, the tusks me not protruded, regret that we cannot specify the period of their appearing. Some Naturalists have thrown out the

the old occasionally shed their teeth: opinion have seen no confirmation, although has been stated that many full grown animals have rather short teeth, and some are seen with only one; which however, is satisfactorily accounted for from the many accidents to which they are exposed. Previous to the development of the tusks, their physiognomy is of course very different from what subsequently becomes; and it is under these circumstances that, their countenances having a disresemblance to the human, they have times been mistaken for men, and have thus frequently given origin in the story of the merman or mermaid. This occurs the more readily, as these animals, as well - the other Amphibia, and all the aquatic Mammalia, are in the habit of rearing their heads above the water, and attentively gazing around upon ships, - any other passing object. Accordingly, infind Mr Scoresby expressly mentioning, "I have myself seen a Sea-Horse in this position, and under such circumstances that it required little stretch of imagination to mistake it for shuman being. So like, indeed, was it, that the surgeon of the ship actually reported to me his having with his head just appearing above the surface of the water." *

With the forms which we have me described, and me especially after the details previously given, it will readily be understood that the Sea-

Horses adapted in very different degrees land and water. The latter unquestionably is their common, well and natural, element I for it all their organs we beautifully adapted I and, when in the liquid wave, all their members have free scope, and work to the admiration of those who behold them. Whether descending into the depths of the sea, or swimming along its surface, their members are perfectly suited for their exigencies, and hence we find Zorgdrager stating, "That it is as difficult to follow the Morse with boats in rowing, it is to follow the Whale itself;" implying, need scarcely add, a great velocity in their and again, when quiet, much are they their that they sleep profoundly upon the surface, and, according to Schreber, are carried along as if they were dead. Upon the land, - the other hand, they in a strained and far less favourable condition; while at the same time it must be bered, that this sojourn is absolutely requisite, is is land that they form their lair, like other quadrupeds, and carry on the process of lactation. Their swimming paws, so admirably adapted for the water, are but ill suited for the land; and, though they make use of them for necessary transport, the operation is both awkward and irksome; "their gait," says Martens, "is a kind of jerking; they can make considerable springs, and and advance pretty rapidly, with the help of their teeth. When they continue on land, they appear, however, and really, to a great dégree, are necessarily, sluggish brutes."

Another important consequence of their to land witheir being deprived, in w great degree, of their ordinary food; some have gone as far as to say of all food; and that not only during their more protracted confinements, but all times when they leave the sea, and come ashore, whether it be for days weeks. Thus Lord Shuldham, in his interesting account of the Walrus, m observed in the Gulf of St Lawrence, states, that they are in the baof crawling up to the shore, in a convenient landing place, and of remaining sometimes fourteen days together without food, when the weather is fair: but on the first appearance of rain they retreat to the water with great precipitation;* and Buffon observes he eats upon land, which obliges him to return to the man agreet of food. The reader is already that this abstinence is trifling in comparison of what is alleged concerning many of the Seals; to whom they have another point of resemblance, viz. that the Morse has been observed discharge from its stomach considerable quantities of stones.

"With regard to what constitutes the common food of the Walrus Naturalists do not seem well agreed. Some, as Schreber, affirm that they are not at all carnivorous, whilst the common opinion—that of Fabricius and Crantz—is, that they feed is shell-fish and the marine vegetables which adhere to the bottom of the sea; and that

from the spots where it grows. Buffon, again, says that they live up prey as the Seal does, and particularly herring and small fishes; in other words, that they are carnivorous. Scoresby mentions that in their stomachs he had met with shrimps, a kind of the fisher, again, states that he found "long branches of sea-weed, fucus digitatus;" that, from these facts, well from pointed observations of Martens, we have little doubt they momnivorous, and make both of animal and vegetable food.

Proceeding from their physical to their mental constitution, we may observe that they are gamous, and thereby enjoy a peace and quiet in ordinary life which presents a striking contrast to what is seen in the case of very many of the Seals. They also appear to be in m remarkable degree social. We hear little mothing of them in solitude, in single pairs, but united together in dozens, were frequently in hundreds, and sometimes even in thousands. This crowding together | land, of many awkward and noisy creatures, frequently gives rise singular enough spectacles. "The moment the first gets ashore, so as to lie dry, it will not stir till another comes and forces it forward, by beating it with its great teeth; this one is served in the same by the next, and m on in succession till the whole are landed, tumbling over one another, and

^{*} Apad Bell, I Quadr.

forcing the foremost for the sake of quiet to remove farther up." Usually harmonious among themselves, they have no disposition to molest others. Retirement is the object of their choice, and, far from being the enemy, naturally they mot even of man. "The Walrus," says Scoresby, "is a fearless animal. It pays - regard to a boat except an object of curiosity. Being sometimes taken by the harpoon when in water, if the attack fail, it often affords an opportunity of repeating it." This is mentioned proof of its stupidity; but if slow to learn, its dear bought experience = length vinces it of man's unrelenting persecution, and then it watches against every sudden surprise with remitting perseverance and the most cunning stratagem, so that, with all art, man often cannot reach it; and if in favouring circumstances he does, then all latent energies of its character appear. Though the aggressor, it can ably act in defence | and behaves with cool courage and great bravery. It do much for its individual defence, and is willing to lend mefficient help to its associates, and thus combining, they become most formidable, and dangerous foes. Here, too, it is that their parenand filial feelings are called forth: the mother. with the most admirable self-devotion, sacrificing itself for her young, and the young exhibiting an affection for its parent, which an animal, nor man himself, could exceed. A few details will serve to

illustrate these peculiarities in the character and babits of the animal.

Their tendency to herd together is well displayed in the account given by Lord Shuldham. "The Walrus," he remarks, " is a native of the Magdalene Islands, (Gulf of St Lawrence.) They resort thither early in spring, and the place peculiarly adapted to their nature, abounding with shellfish (clams) of very large size. Here for a time they are suffered unmolested to come on shore, and amuse themselves, till they acquire boldness; for, their first landing, they so exceedingly timid as to make it impossible for any person to approach them. In a few weeks they assemble in great multitudes, which, previous to their being disturbed, used to amount to 7000 or 8000." The same fact, along with others, illustrated by Captain Cook, who me of the first circumnavigators who gave any thing like | distinct account of this creature. mencountered them in the North Pacific Ocean, where his further progress was arrested by the impenetrable barrier of ice. "At o'clock." rend, "we got entangled with the edge of the ice, on which lay an innumerable number of Sea-Horses. They lying in herds of many hundreds, huddled one over the other like swine, and were roaring and braying very loud, so that in the night, in foggy weather, they gave m notice of the vicinity of the ice before we could me it. They were sel-

Apud Pennant, in Arctic Regions, 149.

dom in a hurry to get away, till after they had once fired at, when they would tumble over each other into the sea, in the utmost confusion. Vast numbers of them would follow, and come close up to the boats, but the flash of a musket in the pan, or even the bare pointing of one, would send them down in an instant." Zorgdrager, in his account of the whale-fishery, gives a similar testimony mentioning that, before they persecuted at Spitzbergen, they advanced far upon land, and little upon their guard, so that sometimes 300 = 400 of them were killed at a time. They were soon taught, however, a lesson of caution and prudence. "Ere long," continues the interesting voyager, "they withdrew to the most unfrequented places, into tired plains and banks of sand, where vessels rarely approach, and when followed there, instructed by the persecution they had suffered, they are much upon their guard, that they keep always near the water, to facilitate their retreat. This fact I experienced on a large sand-hank near Werland, where I fell in with a troop of thirty in forty; the very margin of the water, and the others at ma great distance. We stopped some hours without landing, in the hopes that they would advance further into the plain. But as this stratagem did not succeed, we landed with two boats to the right and so of them, but almost the whole of them the water the moment - put our feet shore." Zorgdrager thus ascribes their increased caution to dear bought experience; and the

lesson, it would appear, could be learned very thoroughly; for Cook again remarks, "We make found the whole herd asleep, some being always on the watch. These, the approach of the boat, would those next to them; and the alarm being thus gradually communicated, the whole herd would be awake presently."

But, with all their watchfulness, are not to wonder that, when man makes the attack, and lects his time and opportunity, his designs should circumvent, and his arts entrap, his devoted victim. We have already seen that their first object is always to escape; but if foiled in this, they defend themselves with holdness, and conduct themselves with a gallantry which ensures the spect, least, of their foes. "When I wounded one," says Martens, " others speedily surrounded the boat, and whilst endeavoured to pierce with their tusks, others raised themselves out of the water, and we every thing they could to board it."" The testimony of the celebrated Captain, Sir Edward Parry, is very specific un this point. On encountering these animals in Fox's Channel, he remarks, " saw about 200 lying piled, as usual, over each other the loose drift ice. A boat's more from both the Fury and Hecla proceeded to the attack; but these gallant Amphibia, with their cube mounted in their back, made most desperate resistance, and one of them tore the rhanks of a boat

Voyage in Greenhad.

two three places. Three only killed."* And Zorgdrager,-" When blow is struck with spear, it must instantly be retracted to prevent the animal from seizing it, and with it wounding the assailant, as sometimes happens. When verely wounded itself, it becomes very furious, striking from one side to another with its teeth, and breaking the weapons with which it is attacked; and at last burning with rage, it places its head between its paws, and allows itself to tumble into the sea." The only other witness = shall adduce on these points is Captain Phipps, afterwards Lord Mulgrave, who encountered them during his attempted voyage to the North Pole in 1773. When near an island to the north of Spitzbergen, he remarks-"Two officers engaged in an encounter with a Walfrom which they came off with little honour. The animal, being alone, was wounded in the first instance; but, plunging into the deep, he obtained a reinforcement of his fellows, who made a united attack upon the bost, wresting me oar from me of the men, and had nearly upset her, when another boat came to their assistance."t

Their mutual affection having now been rendered sufficiently apparent, we add an anecdote or two, bearing more especially their parental regards. "The female," says the illustrious Captain Cook, "will defend the young to the very last,

Ed. Cab. Lib. i. 299.

and at the expense of her | life, whether | the on the ice. Nor the young one quit the dam, though she be dead; so that, if you kill one, you sure of the other." The following incident is mentioned in Cook's third voyage, when the Resolution and Discovery were returning from Bhering's Straits. "In the afternoon we hoisted out the boats, and sent them in pursuit of the Sea-Horses that surrounded our people man more successful than they had been before, returning with three large ones and a _____ one. The gentlemen who went on this party were witnesses of several remarkable instances of parental affection in these animals. On the approach of boats towards the ice, they took their cubs under their fins, and deavoured to escape with them into the ____ Several whose young willed and wounded, and left floating on the surface, again and carried them down, sometimes just - our people going to take them into the boat; and they might be traced bearing them to a great distance through the water, which coloured with their blood. We afterwards observed them bringing them up at times above the surface, as if for air, and again diving under it, with a dreadful bellowing. The female, in particular, whose young had been destroyed and taken into the boat, became so enraged that she attacked the cutter, and stuck her tusks through the bottom of it."

Considering intelligence and amiability thus displayed by the Walrus, are not greatly

surprised to learn that it can be domesticated. The instances of this sort we have met with men not merous, yet me cannot withhold our credence withe statement which De Laet* quotes from Edward Worst who mentions that he me one of these animals alive in England, which was three months old, and which had been brought from Nova Zembla. "Every day it was put into water for a short time, but it always seemed happy to return to dry ground. It about the size of a calf; and could open and shut its nostrils | pleasure. It grunted like wild boar, and sometimes cried with strong deep voice. It was fed with wild me millet, which it rather sucked in than masticated. It was not without difficulty that it approached its master, but attempted to follow him, especially when it had the prospect of receiving nourishment at his band."

The Walrus has been known, though very rarely, to visit the British shores. One individual landed the Island of Harris in the year 1817, and speedily shot; † and another would appear to have been killed in Orkney in 1825.†

The chase of the Walrus is of great antiquity: accordingly, we find that Octher, the Norwegian, about the year 890, gave an account of it to Alfred the Great, "having," he says, "made a voyage beyond Norway for the more commoditie of fishing Horse-whales, which have in their teeth bones of

Description des Indes Occid. apud Billion.

[†] Mac Edin. Man. Journal, vol. ii. Paper by MacGillivray.

great price and excellencie, whereof he brought some at his return to the king." The capture undertaken both by sea and land, the former for evident reasons being the more hazardous enterprise. A Greenlander will venture the encounter alone. without the assistance of three or four expert comrades. They employ a harpoon, which, however, from the toughness of the skin, is fixed with difficulty, and hence it is not as easy an operation m the striking of a whale. When the instrument holds, the animal is allowed to swim about it is wearied, they then try to _____ it, and kill it with lances. But under these circumstances. the process is not an easy one, the animal, as we have stated, getting roused, and fighting a hard battle. "It is necessary," says Zorgdrager, " to make a selection. Accordingly, the fishers aim at the eyes, which obliges the animal to turn his head, and then the fatal blow is simed at the breast."-" In this crisis," says Scoresby, "the best defence against these enraged animals is sea-sand, which being thrown into their eyes, occasions partial blindness, and obliges them to disperse. Then the captured becomes a man easy prey."

The following is Lord Shuldham's account of the capture on land:—" When the herd had made little advance from the sea, the hunters, armed with sharp spear, under of night, and with the assistance of good dogs trained for the purpose, endeavour to disperse them. This attack, in the Gulf of St Lawrence, in the making a cut,"

it generally looked upon as most dangerous adventure, it being impossible drive them you will, and to avoid them; but as, during the darkness, they do not know their way to the sea, many fall victims. The aim is made at the throat and breast; and in way 1500 and 1600 have been killed at cut."

As before hinted, fire-arms have not been found efficient in this encounter. The skin is so tough, and the lard so thick, that even the ball of so rifle sourcely ever penetrates with effect. When, however, the musket is charged with small shot, and fired in their eyes, it proves more serviceable, as, when thus blinded, the sailors can attack without danger, and successfully so their sharp instruments.

In the present age, according to Mr Scoresby, the Sea-Horses range the coasts of Spitzbergen almost without molestation from the British. The Whale-fishers rarely take half a dozen in a voyage. The Russians we their principal enemies, who, by manual of the hunting parties sent out to winter on the coast, capture a considerable number.

The products of the Morse, for which it walued, and made object of casual operator preconcerted chase, are its flesh and skin, its oil and teeth, the latter being by much the most valuable. Among the inhabitants of the Arctic regions its flesh is much valued and esteemed, and is greedily eaten along with the lard, and even the skin. Among mariners, food is only regarded as make-shift. Thus Sir Edward Parry—"The

found tolerably good, affording a variety amid the ordinary sea-fare." And thus Captain Cook-"Being in want of fresh provisions, and numbers of Sea-Horses in sight, the boats despatched and procured Till had surbosed them Sea-Cows, (probably the Manatee, be afterwards noticed,) - that - not a little disappointed, especially of the seamen, who, from the rarity of the thing, had been feasting their eyes for some days past. Nor would they have been disappointed now, nor known the difference, if had not had some on board who had been in Greenland, who declared what animals these were, and that no one ate of them. But, notwithstanding this, lived upon them as long as they lasted, and there few on board who did not prefer them to our salt ment."

The skins are found very useful in a variety of ways about shipping. In ancient times most of the ropes in the vessels of northern countries appear to have been made of this substance, and, when cut into shreds, and plaited into cordage, it formed lines which was used for the capture of the Whale; they also answer admirably for wheel-ropes, being stronger and wearing much longer than hemp. Cables, too, were wont to be manufactured from them, and the Findlanders used to pay tribute to the king in this form. They also used in place of the in defending the yards and rigging against chafing by friction. When tanned, the skin is converted into soft the leather, above an inch in thickness;

but it by the state of useful, and durable in its green that state. Zorgdrager states that, when produced in Canada, it was cut into slices, and exported to America for carriage traces, and into England for glue. We believe it is admirably adapted for harness, and the manufacture of riages.

We have already had occasion to state that the oil of the Morse is man valued than that of the Whale. The quantity varies at different times of the year, mecording to the condition of the animals. Scoresby states that, at some seasons, the produce is said to be considerable, but that he never met with any which afforded above twenty or thirty gallons of oil. Zorgdrager gives the average quantity at half more ton.

The teeth susually more valuable than the oil. We have already stated their usual dimensions. The celebrated Gmelin, in his account of his journey in Siberia, mentions, that Anadeirkai the teeth found in such numbers on the shore, that there was no occasion for the inhabitants to slay the animals their account. The relative value of the ivory from them and from the Elephant is variously stated by authors. Thus, whilst Lord Shuldham that the ivory of the Sea-Horse is inferior sort, which soon turns yellow, Anderson, and after him Schreber, maintain that, in hardness and permanent whiteness, it surpasses that of the Elephant. Zorgdrager also states that it is precious, pecially the internal part, and Denis, that ivory

can be fairer. This latter, believe, is didented by the competent judges. The Greenlanders, and other northern nations, in the habit of converting it into their important hunting weapons, and into tools and instruments for domestic Among the Chinese it memployed for those curious to which they so wonderfully turn ivory; and, in the civilized nations, it is extensively used for the invaluable purpose of giving teeth to the toothless.



THE SEAL GROUP, OR PHOCIDE.

"L'histoire des phoques est même aujourd' hui extrêmement embrouillée; — grand nombre d'espèces sont —— L connoitre."—LESSON.

L-THE PROPER SEALS, OR PROCES

In proceeding to the Seal group, or Phocides, it has been called—the Phocaceæ of French writers—we shall consider first the Earless Seals, or Proper Phoca, the Inauriculata of Peron. The time is not very distant, as explained on p. 98, when the whole of the Phocae were grouped in genus; but latterly, M. F. Cuvier and the French Naturalists have divided them into seven distinct genera, and Professor Nilsson, by establishing another, has made the number eight. Of these, six belong to the Proper Phocae, and two to the Eared Seals, Otaries. From the total want of classification which long prevailed, it naturally happened that, in whatever country Seal was seen, it regarded the Common Seal, the Vitulina of Naturalists;

and hence it is next to impossible to ascertain the species to which all the earlier accounts refer; and the additional difficulties arise connected with the colour. This is a subject which would require an extent of discussion into which we cannot enter. The appearance, when dry and out of the water, is often different from what it is when wet and in it. Again, it seems established that man species differ much each successive year, III full age is attained; and that in some, too, the male is very differently marked from the female; circumstances these, which have tendency to induce the splitting of one species into many. Further, it has been stated, "that in many specimens of the species, of both sexes and all ages, no two are precisely similar;" in short, that differ in colour - much as our Pointers - Greyhounds; and this remark has been freely applied to many genera-We would here, however observe, that this conclusion should be drawn with caution, and it ought not, the contrary, to be forgotten, that there is great uniformity in the colours of many kinds, both whilst young, and in the adult state. Frequent evidence will subsequently be afforded of this truth; and without dwelling longer upon the subject, will now refer only to the Vitulina of the Scottish shores, to the Rough or Bristled, and finally to the Fur Seal. The ascertaining of this uniformity where it really exists, would contribute much to the ready determination of species.

When Baron Cuvier, fifteen years ago, examined

the Paris Museum in relation to this group, he found that there is distinct evidence of three species is varieties having been confounded as the Common Seal; but neither he nor any other of the French Naturalists succeeded, at that time, in detecting very clear or satisfactory specific characters.

The peculiar characters of the Proper Phocæ are, that their feet are enveloped in the integuments, so becoming swimming paws; the anterior are very short, and the posterior much in the seem line with the body; they have seexternal ears; the incisors vary from six to four the upper jaw, and from four to two in the lower; they are simply cutting; the molars have generally many small lobes or cutting points; the toes of the feet see webbed, and terminated by sharp claws.

GENUS CALOCEPHALUS, OR MINIS SHAPED HEADED SEALS.

The name of this genus was selected an account of the great size of the cranium, and the shortness of the snout. The brain accracy inferior is size to that of the best organized monkeys, and hence they are easily tamed. Their dental formulary as 3.1.5—34.

The grinders are formed of a large point in the middle,

smaller an anteriorly, and two posteriorly; in nortrils are
extend beyond the mouth; in manage of in the four;

sometimes are deated two.



SEAL.

Ph. Vitulina .- Level.

PLATE IL

Specific Characters.—Molars placed in mobilique position along the javo; posterior margin of the palate acutely and deeply notched; patatal foremen on marillary bone.

Phoca vitalina, Cav. Desm. 375. Calocephalus vitalinus, Fr. Cuv. Less. Sea-Calf, and Sea-Dog of Saliors. Solkle and Tang-fish of the North of Scotland. Raus of Western Line.

For the detection of specific characters of this Seal,

man simple and satisfactory, are are, after long
and vexations doubt, indebted to the skill of Professor Nilsson. These characters consist, Ist, in

the oblique position of the molar teeth, by which the internal posterior margin of is in contact with the outer anterior margin of the next behind it: this is regarded ununerring character, which exists in no other known species; 2d, in the posterior margin of the palate being deeply notched; and, 3d, in the external process of the masal bone being elongated and rounded, whilst the inner is not much than half the length of the former, and with its fellow makes usuall triangle.

As we have had the pleasure of verifying all these indications in several animals which were captured on the Scottish coasts, we shall enter somewhat into details. It through the kindness of Dr and Mr F. Knox that we first had an opportunity of examining the carefully preserved specimens of two Seals, mother and cub, caught in the Frith of Forth: the bones of the cranium of the latter of these are set up separately, and beautifully illustrate the general shape of the teeth, and the third specific character above enumerated; the adult cranium is preserved entire, and as clearly exhibits the two other characters. Along with them me received the skin, measuring five feet in length, with markings equally distinct and peculiar. The ground of the coat or robe is a dark tawny white colour, and this is studded universally over the body with small brownish black spots; the paws and feet have wery dark ground, but are still

History of British Quadrupeds, by Thomas Bell, Esq. 262.

spotted. The robe is entirely destitute of fur, and is wholly composed of hair which is short, thick set, strong, and hard to the touch. Much about the time we found in the rich collection of the Edinburgh Royal Museum two other specimens, the markings of whose skins precisely agreed with each other, and with the one just mentioned. These specimens three feet long, and from their size, and the appearance of their teeth, may with tolerable certainty be concluded | be young. Finally, we have had the pleasure of examining a specimen in the valuable collection of the late Sir Patrick Walker, by whose polite attentions we were much obliged. This animal was captured the West of Scotland, in the island of Colonsa, at time when Sir P. in the neighbourhood; and he, with that praiseworthy zeal for natural history for which he was distinguished, with much and ability superintended its preparation. The first and peculiar character of this species, viz. the position of the teeth, | clearly elucidated in this specimen, and the colouring of the robe perfectly agrees with those already dwelt upon. In length is five feet three inches. To this we have to add, that Sir Patrick's collection contained another with precisely similar markings, which was also taken - Colonsa, measuring about three feet, and probably young. Here then we six Seals, four of which men certainly, and the other two probably, captured on the Scottish shores; they are true vitalinæ; the shades of tint and colouring, of great and small, are perfectly identical; and hence we conclude that this is the

Along with notice of these specimens, we may associate reference to plate of foreign workmanship, which closely resembles them. We allude to a very accurate and apparently faith-representation, by the celebrated Albinus, of a taken on the Dutch coast, the markings of which correspond exactly with those already mentioned, that we do not hesitate to regard it the same species. Albinus' description is tolerably minute as it regards the internal structure, and to it, therefore, we refer the anatomical reader; such extracts suit our purpose, of further description, we shall here epitomise and introduce.

"The Seal," says Albinus, "which was sent me taken in the neighbouring seas, and measured six and a half feet from the mouth to the termination of the posterior extremities. It had external auricles, and the foramina leading to the organ of hearing man very small. At the inner angle of the eye man third eye-lid, which could be easily drawn over the whole eye, an apparatus which appears to be frequently supplied to those animals in which the eye-lids are used not only as a covering, but more especially an defence from external danger. A few hairs went to form something like eye-brows. The nostrils were large, lunated, and easily opened. The upper

[·] Accademiese Annotationes, lib. iii.

lip much and roundly prominent, with whiskers like those of the cat; the hairs were not very numercus, of a white colour, rather long, like bristles, hard and horny, yet flexible. The teeth we described those of the genus, in respect of number, and werv fit for seizing prev, and for self-defence. The tongue long, and round the tip, but somewhat suicated at the upper part, so m to appear double. The hair generally was short, slender, and smooth, covering the whole of the body and the extremities. The colour was verging to tawny, (fulvum,) and the whole body was studded with number of dark spots, the tints being paler the belly and chest. The tail and posterior extremities were wholly brown, without any spots, except at the origin of the fingers, where there were few tawny markings; the same observations apply to the fore-paws."

We have already dwelt sufficiently on those difficulties of our subject, which render the establishment of species and genera work of much uncertainty and toil. The man mann equally prevent our arriving atany precise knowledge respecting the distinctive peculiarities in the habits and dispositions of these animals; and therefore every authentic fact on these points is a valuable addition to our scanty stock of information. It is this account that we the more readily avail ourselves of some details contained in a manuscript on the Seals of the Western Isles of Scotland, which has kindly been put

into hands by James Wilson, with free liberty it please.* From this we learn that the species, known under the appellation of Rawn, or Common Seal, is by much the frequent. "The Common Seal, read, is still to be considerable numbers on the westcoasts; and they generally frequent sounds and where fish is abundant, and where the water is a exceedingly deep. They are particularly fond of flounders, which, on we coasts, appears be their principal food, probably from their being a ground fish, and therefore easily caught. I have seen Seal," says Mr A. M'Neill, Mr Wilson's principal informant, "frequently rise to the surface, and dive again with a flounder in its mouth, being unable, from the breadth of the fish, to swallow it, and when engaged in this attempt so intent they on their prey, that they are frequently approached and shot." It is commonly believed that they feed m fish of all sorts, not excepting Salmon, and that they follow their prey up rivers for many miles in pursuit.

The opinion in the Western Islands agrees with that stated by Dr Fleming, that this variety produces its young about midsummer. According to this last authority, the number is two = | birth, though most hold there is only one. They

litter on In Island of Crymond.

[&]quot; man paper has since been published in the Magazine of Zoology and Botany. See vol. i. p. 539.
† Two were, in the July of this year, found in

usually brought forth in caves, and very shortly after being whelped are taken to by the mother. The Seals of the Western Isles frequently attain the weight of sixteen stones, or 224 pounds, and swim with great rapidity; the author of the manuscript states he has seen them swim half mile in five minutes.

" All Seals," adds Mr M'Neill, " and fond of going to shore frequently, generally every tide. I have observed that they always pelect the flattest and shelving rocks which have been covered with water I full tide, and almost invariably those that are separated from the main land. They generally go ashore about half ebb, and lie together = close as to appear almost touching, in the number sometimes of one, two, three dozen, with their heads invariably turned towards the water, and seldom than a vard or two from it. Like many other animals, however, they place one of their number a little farther up the rock, who constantly the watch, and is every and then raising his head snuff the wind. In this position they frequently go to sleep with their head, I may say, hanging towards the water. They generally prefer small rocks, and, as I have already said, those that covered with water, for two reasons, viz. because they smoother, flatter, and softer, being covered with weed, and also because, being small, they cannot easily be approached without observation. They generally remain shore, unless disturbed, for six hours, that is, till the returning tide floats them off the rock. When an shore they frequently utter a grunting noise, not unlike pigs in stye, but they never do so unless they feel perfectly secure."

There no doubt that the young of this species, especially, are easily domesticated, and display a great deal of sagacity. Thus Mr L. Edmonston mentions, "That one in particular became that he lay along the fire among the dogs, bathed in the sea, and returned to the house; but having found his way to the byres, used to steal there unobserved and suck the cows; - this account he discharged, and sent to his native element."* The following particulars concerning a young Seal of this species to the polite and kind attention of Professor Trail. "A young Seal brought to the house in which I resided when boy, and lived for some time chiefly in the kitchen. It about 21 feet long. It sucked one's fingers readily, and fond of cow's milk, which it greedily drank. When thrown into the mit speedily turned to the shore, and it seemed to be rather social animal. Its favourite position the kitchen hearth, the stone of which was elevated about four inches above the floor, and it generally laid itself close to the embers of a peat fire, burning mu the hearth, that its fur was often singed. If carried to any part of the kitchen, a speedily found its way back to the hearth-stone, moving by mann of its

[·] View of Zetland, ii, 293,

fore feet, and moaning piteously. I am uncertain whether this singular predilection for the fire-side, in animal whose natural element is the sea, the effect of illness, or the pleasure which these animals always seem to have in basking in warm sunshine."

The Ph. vitulina, will appear from what has already been said, is generally understood to have wide distribution. At m distant period they regarded not around the British shores. As, however, they me extremely shy, they almost invariably leave those districts which are growded with population, and retire to spots where they are little disturbed. The Isle of Wight, many years ago, was famous for the number of its Seals; and the remark has more recently been made, "That about the Land's-end, and in Cornwall, they are perhaps more numerous than in any other of the coasts of S. Britain, unless it be in some parts of S. Wales. They are found rarely off Cumberland and Lancashire, also off Northumberland, Durham, and Yorkshire, but in general they are rarely observed off the counties south of these."*

This Seal still frequents the estuary of the Tees, and may be seen in small herds basking on the sand-banks at low water: they emigrate to and from this locality, and much more abundant in years than others. These animals commit

[·] Bingley's Remain Quadrupeds, p. 57.

immense havor among salmon; and as in some years there segreat scarcity of these fish, and in others great abundance, segret circumstance has been associated with the presence of the Seal.*

They are common, believe, both in Scotland and Ireland than in England, more especially where the coast is bold and wild, and where they in little disturbed in their retreats. We clude from what has been already said that this Seal is sometimes seen off the coasts of Holland and the neighbouring countries, and it is said to occur in large flocks the coast of Greenland. This statement, however, very much requires confirmation.

Seals, according to the testimony of older authors, in former times used extensively as food even in these isles. Thus Sir R. Sibbald says that the people in the island of Uist, Shetland, attack the Seals and kill them; the skin they sell, but the bulks they salt, and in the time of Lent eat them as sweetly m venison; and Low, in his Orkney, states that in North Ronaldsha they were captured for the purpose of eating, and were said to make good hams. At present, however, they are sought after only maccount of their skins, and the oil which they yield.

These captured both land and at sea, and in variety of ways. A few of the young lain in the where they brought forth.

The old ones are shot when they be reached

^{*} Bell's British Quadrupeds, p. .

sand-banks and rocks. Sometimes they are destroyed by recurved iron pikes secured in beams of wood fixed me the banks which they frequent, near ' low water mark; the Seals, at the proper time of the tide, are surprised, and driven rapidly into the water, when they are interrupted by the pikes, and despatched with clubs. According to Dean Monroe, the Seals of Islay by the help of trained dogs. Martin, in his "Western Islands," makes mention of a rock off N. Uist, where there is an annual fishing in the month of October. A number of boats resort to the island with people sufficient to guard all the passages, and, on a signal given, the general attack begins, and sometimes 300 young and old killed in the encounter. In Shetland, we learn from Edmonston, they sometimes taken by setting a net, generally a night, a little before full tide, around those rocks which we known be their favourite haunts, taking care that the upper edge of the net be sunk to such a depth ... shall admit of the Seals swimming over it. The almost universally lay themselves on the rocks when the wind is off shore. ____ after the water begins to fall. When they have been observed to have done so, and time has been allowed for the tide to fall sufficiently to bring the edge of the net to the surface, a sudden alarm is given, and the Seals, in their hurry to escape, regardless of every other consideration, become entangled in the

net, and taken.* The author of the manuscript already quoted states, that "the Scal-fishing in the sea in autumn, and is practised by means of nets stretched across sounds betwixt rocks where the Scals in in to swim. In these the Scals entangle themselves, and are taken out either by boat, or, in those in which the net is left dry, by persons on foot. It is, however, the young only that are caught in this way, and that only during month or two in autumn. In fact, the Scals display considerable ingenuity in evading the net, sometimes creeping out at the bottom, or jumping over it at the surface."

View of Zetland, vol. il. p. 293.



COMMON SEAL OF THE FRENCH COAST.

PLATE III.

Phoca vitulina, Linn. Phoque Commun of the French, Le Veritable Vean Marine, F. Cav.

AFTER having thus dwelt at some length upon what we regard as the true Vitulina of the British shores, — shall next introduce to notice that variety which Baron Cuvier has selected as the type of the genus, and which M. F. Cuvier denominates "Le ritable veau marine." This animal, if the true Ph. vitulina, should of —— have the —— essential characters with the one we have just left; and any apparent differences should be only temporary and insignificant, the consequences of youth, age, &c. Having had no opportunity of examining the identical variety selected by Cuvier, we cannot decide if the two in every essential character coincide. From the examination of the plates, we should be led to suspect that they differ; and this suspicion is

Oss, Foss, L = p.

confirmed by the authority of Covier himself, who, knowing that the Dutch variety, described by Albinus, (and which have identified with the of the Scottish coasts,) had long been founded with the *Phoque Commun* of the French coast, was disposed to distinguish them; and in this decision he is followed by his brother.

The length of the Common Seal of the French coast is stated, by nearly in the native Naturalists with the exception of Baron Cuvier, to be about three feet; he, however, gives it is between four and five. The ground of the robe is a pale yellowishgrey, clouded and spotted in the upper part of the body with a dark grey, arising from the hair in these parts being black. The circumference of the eyes and muzzle, the lower portions of the body, and the feet, are of a pale yellowish-grey, becoming almost white underneath: the upper part of the muzzle and tail is sometimes brown; the nails is black and strong.

The individual represented in the two figures on the accompanying plate, taken from M. F. Cuvier's Mammiferes, was still young: it measured two feet eight inches, from the end of the snout M. the tip of the tail; and the length of this member was three and M. half inches. In the plate it is represented both whilst wet and dry, that the differences in these two states may be exhibited. When the animal out of the water, all the upper part of the

Loc. eit. p. 202.

body and head, together with its hind feet and tail, are of slatey grey colour. The grey upon these parts is uniform, whilst that on the sides of the body is composed of small round spots, on a ground somewhat paler and more yellow; I the under part of the body is of this latter colour. Again, when the coat is dry, the grey is to be seen only along the back, and even here it is very faint: and, with this exception, the body is wholly yellowish. This difference of colour appears to depend partly upon the effect of the water on the long silky hairs, which are generally flat, and which, when moist, become somewhat transparent, thus modifying the colour of the parts underneath; and partly upon the circumstance that, when out of the water, each hair being opaque, curls up at its extremity, and allows the yellow portion, which is situated deeper, to be seen. The oily matter, which lubricates these hairs, appears to issue from certain glandular organs which abound round the eyes, and upon the shoulders, flanks, and lower parts of the belly. This matter is black, and offensive to the smell.

THE MARBLED SEAL.

PLATE IV.

Phoen discolor. Calorephalus discolor, Fr. Cuv. C. Martré, Less.

WE next introduce another variety captured on the French coast, which was originally identified, but subsequently dissociated from the true P. vitulina. Baron Cuvier states, that it does not appear to be a variety proceeding from age and an only, though its cranium, he adds, does not sensibly vary from the Common Seal.* Professor Nilsson, we understand, regards it an distinct species, and applies to it the manus annellata.

M. F. Cuvier remarks—"I was for a considerable time in possession of the individual on which I found this species. My specimen was young, and its size appeared to correspond with that of the ComSeal." The colours, however, in which it was clad very different. — the ground-work of its coat — of a very deep grey, varied with whit-

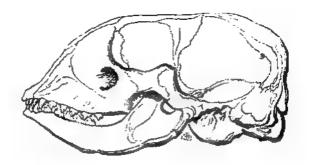
^{&#}x27; Oss. Foss. v. 201.

ish irregular lines, which formed, especially the back and flanks, kind of marbling, which marked when the animal was in the water than when it dry. According to the Baron, the coat, wholly of blackish-brown, is marked with tortuous and irregular lines of whitish-grey, which form islands or marble spots; the under part is paler, and its greyish lines are broader and yellower. There are other individuals in which the whitish-grey of the abdomen prevails more extensively, mounting up the sides; and others, again, in which the markings on the back have a resemblance to the eye.

The specimen referred to taken on the coast of France, and was kept several weeks in the Royal Menagerie. M. F. Cuvier observes-" Except in Monkeys, I have known any wild animal which was more easily tamed, or attached itself strongly. When it first came to the Jardin des Plantes, it endeavoured to escape, when I wished to touch it; but, in a very few days, all its apprehensions vanished: it had discovered my intentions, and rather desired my than feared them. It was in the enclosure with two small dogs, which amused themselves by frequently mounting on its back, with barking, and even biting it; and, although these sports, and the vivacity of the attending movements, were little in harmony with its own actions and habits, yet it appreciated their motive, and seemed pleased with them. It offered any other retaliation than slight blows with its paws, the object of which was to encourage rather than repress the liberties taken. If the puppies escaped from the enclosure, the endeavoured follow them, notwithstanding the difficulty it experienced in creeping along the ground, covered with stones and rubbish. When the weather cold, the three animals huddled closely and kindly together, that they might contribute to their mutual warmth."

The creature did not exhibit any alarm in the presence of or animals, and did not flee unless when upon in such a way as to threaten its being trod upon, when it got out of the way to avoid injury. Though very voracious, it did not manifest any opposition or anger when robbed of its food. "Often," says the learned Naturalist, "have I tried him when pressed with hunger, and he never opposed my will; and I have seen the dogs, to whom he much attached, themselves when he me feeding, by snatching the fish from his month, without exhibiting any rage. On the other hand, when their man supplied the Seals, (for he had a companion,) as they lying in the men trough, a battle was the usual result, and blows with their paws followed, and usually happens, the more feeble and timid left the field to the stronger."*

Manneif, Livr. 1819.



THE BEARDED, OR GREAT SEAL.

Phoea barbata.

PLATE V.

SPECIFIC CHARACTERS.—Minute large; lips tumid. Third toe of the fove-feet longer than the others; fur dark coloured; teats four. Incisor teeth small and conical, the outer the larger; canine teeth conical and slightly curved; grinders in a direct series, with small intervals nearly uniform, having a large conical, and two small lateral points.*

- barbata, Fab. Mul. Cuv. Denn. (No. 378.) Calcophulus barbatus, F. Cuv. Urksuk of Crantz. Great Seal, Pen. Le Grand Phoque, Buff. Hauf figh? of North of Scotland.
- are not aware that any authentic representa-
- This description of the last derived from MacGillivray
 Lib. vii.

tion of this species has hitherto been published.* must say word word on on plate. The individual from which the engraving is taken brought from the Arctic regions by the late Mr Latta, Surgeon, Leith, and presented to the Edinburgh Museum by Bindon Blood, Esq. From the state of the preparation we cannot judge so satisfactorily could wish, but, at the same time, we regard it as a specimen of the P. barbuta. It is nine feet one inch long from the mouth to the tip of the tail; the tail inches. The fore-paw, it will be seen, not shaped like those previously described, somewhat assumes the appearance of the human hand, will be more particularly stated in the sequel. The claws wery strong and black, carinated above: the bide over is of a uniform dark fawn colour. Along with the Great Seal, we have ciated a small white one, a specimen of which in the Edinburgh Museum, scarcely three feet long, which has been supposed to be the young of this species. The white colour, it will be observed, differs entirely from the yellow shade appearing in those represented in Plate III., and is of pure milk white colour all over. These figures, it should be remarked, being taken from excellent specimens, which are genuine and authentic, possess intrinsic value.

The Great Scal of Parson, Phil. Trans. vol. ziii. 1 and of Buffon, Suppl. t. vi. pl. 45, are now ascertained belong to Grey Scal; which

even should the hesitation remain their rect classification.

This species, according | Fabricius, from whose account borrow, and whose statements strikingly substantiated by the specimen above referred to, is often met with ten feet long, and the young of the second year are six and a half feet in length. Its head is long, and its forehead peculiarly prominent; the muzzle is very large, and the lips loose; the hairs of its whiskers are long, numerous, horny, flexible, smooth, white, and curled in the point: the external opening of the ear is larger than in most other species, but without any auricle | the eyes are large, and the pupil round and black, the iris brown. fore-paw is ____ free than in the Common Seal; the shape also is peculiar, approximating somewhat to that of the human hand, having the middle finger the longest, and the thumb nearly a short in the little finger. The body is long and robust, and the back somewhat elevated: the skin is thick. hide of the young is supplied with soft hairs. what woolly underneath, which and deciduous, and but thinly scattered the adult. The colour varies according to the age; the young have dusky colour, and are white underneath: the acquire a deep dark colour. Crantz says that the hair is black upon this the largest species of Greenland Seals, frequently exceeding nine feet. Baron Cuvier says it is grey, sometimes brown above, with a longitudinal streak of black forming

a seem on the chaufrin. The teeth have been already described.

The evidence of this species, (or me regarded as such,) being not uncommon on the Scottish shores, is tolerably conclusive. In several notices we have met, the animal is stated to have reached the length of twelve feet. One is recorded by Pennant in these words-" A gentleman of my acquaintance shot twelve feet long on the coast of Sutherland, but made in particular remarks upon it." And Dr Hibbert writes-" Mr Low has stated in his manuscript tour, that a Seal, which was taken in Shetland, was not less than twelve feet in length." T Edmonston states the usual dimensions to be from seven ten feet; and observes, the male is the largest, and is called Bull-fish. The head is larger in proportion to the body than in the Common Seal; the eyes are placed deep in the orbits, but are large and penetrating. "In general habits," he continues, "this Seal differs much from the one. They associate in pairs, and the male appears to be attached to a single female. They frequent the more exposed situations, and shelter themselves in deep and almost inaccessible caverns. The young are brought forth in the months of September, October, and November, and, when but | few days old, and as large as the Common Seals I the age of several months. They keep by themselves, and

Act. Zool. ii. 159.

never seem to associate with the other species."* A valuable addition has recently been made to knowledge of this Seal by Selby, whose zeal for science needs no eulogium in these pages. "This species," he remarks, "inhabits the Farn and adjacent islands. It attains a very great size, several having been killed during the last summer which weighed upwards of forty-five stones. = 630 pounds, and measured from ten to twelve feet in length. This species calves in November, upon several of the outer rocks, where the young suckled every tide for the space of fourteen m fifteen days, when the long woolly fur which first clothed them is cast, and war covering of close short hair supersedes it; they are then conducted by the dam to the water, from which they only emerge at intervals." † Dr Heysham has recorded that this species has sometimes been driven by tempests upon the coasts of Cumberland it and Mr. Maclean, minister of the parish of Small-Isles, Hebrides, mentions that the Great Seal is a distinct species; and, in proof, insists that it produces its young at a different and later of the year.

These detached notices we thus associate under the head of the Great Seal, . P. barbata | not only because they are so placed by their respective authors, but also because, upon the whole,

[&]quot; View of the Zetland Islands, ii. 294.

[†] Bell's Brit. Quadrupeds, vol. i. 276. Bingley, p. 97.

Account, vol. 27ii.

disposed maintain, in opposition some lately expressed opinions, that was of "the Great Seals authors" do probably belong to this species. The opinions here alluded to founded upon the recent determination of the Genus Halicharus: in other words, of the Grey Seal, which would appear . to be the prevailing variety in the Southern coast of Ireland: as it has been found also in the Severn, and elsewhere. Some have hence inferred, (as think, hastily,) that the Great of coasts belong to this latter species. The data from which induced to demur to this conclusion we do not at present enter upon; the truth appearing to be, that positive decision now be reached | and that the subject requires farther elucidation.

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Another and very explicit account of some Great occurring among the Hebrides, together with some interesting particulars concerning its habits, we take from Mr Wilson's paper. "The Western Islands frequented by three different species of Seal, well known to the natives, and all of which I have repeatedly seen. The Common, Raun, it is called, is by much the most frequent. The second is by much the largest of the three kinds, and least double the size of the Rawn; it known by the form of Tappaist, and though it cocates occasionally with the other kinds, yet in many respects in its habits. The third species is of very diminutive size indeed, and is known by the appellation of Bodach, or man.

average weight of the Tapvaist is somewhere about thirty stones, = 420 pounds, (implying dimensions, conceive, as large as those given by Fabricius.) I is, upon the whole, solitary in its habits, and frequents the most distant and undisturbed places. It is not | lively or watchful | the Common Seal, nor is it measily alarmed. One of the distinguishing traits of this species is the time of producing wyoung, viz. in the end of September, beginning of October, whilst the usual time of the other is the beginning of June. The young, whose colour we have already mentioned, remain the rocks for several weeks before they swim. Sportsmen, when they discover the young in this condition, do not approach it, lest the old one. which has strong sense of smell, should be alarmed by the scent of the footsteps, but they conceal themselves point of the rock within gunshot, and wait the flow of the tide, when the one invariably returns to give the whelps suck. These Seals and of late years become very more on the Western coasts."

As exhibiting the favourite haunts of this and other species, as shall borrow a few remarks from the lively pen of Dr Hibbert. "To the North of Papa-Stour high succeed, which extensively excavated by the waters of the The remarkable of these is Christie's Hole. It explored by of a boat, a labour only accomplished the calmest weather.

A large arch first presents itself, and after rowing through wants the light of the sam bursts from the lofty opening above. The boat then purits gloomy through another extensive perforation, which at length expands into immense cavern, where the light of the sun is wholly excluded. In the innermost there is steep beach, which terminates in small dens, where the larger Seals and hauf fish (the barbata) consort, and where the females produce their young and suckle them. It - customary for two boats' crew, of the island of Papa, to _ this place certain seasons of the year, armed with thick clubs, well provided with candles. They attack the with their weapons. Them by a blow on the head, and immediately put them to death. The animals boldly step forward in defence of their young; they face their destroyers, and with their teeth often wrench the clubs out of their hands. the attempt wain. The walls of the gloomy stained with their blood, and numbers of victims carried off." (P. 551.)

Mr Edmonston informs that these Bearded Seals sometimes taken by setting a net the entrance of the cave, into which they retire, and then firing a piece to alarm them. "It is surprising to me with what force they struggle under water, when entangled in the net, and the length of time they remain without respiring."

gled than twenty-five minutes without performing a single respiration, and when brought the surface still alive."*

Fabricius states that this species frequents the high seas round Greenland, especially delighting in the floating fragments of ice; that it resorts to land principally in the spring time, and is then found among the retired islets. Giesecké says it is seldom met with an the coasts of West Greenland. In these quarters it is regarded both timid and incautious; and the older ones remarked to swim but slowly. It is highly esteemed by the Greenlanders. Though it does not yield much oil, yet its lard is deemed "most delicious." The flesh also been stated by Pennant to be white as veal, and hence it regarded as the most delicate of any.

We may here introduce the few observations contained in manuscript so after alluded to, concerning the third variety of the Western Islands, in the hope that further attention will directed to the subject.

Seals with which I are acquainted; and, indeed, so small, that for a long time I entertained the idea (contrary to the firm opinion of the natives) that it was the young of the Common Seal. This view, however, I consider to ill erroneous, for they are ill even the size of a Seal three months old of the common kind. Besides, they are frequently killed of this size with grey beards and decayed teeth. I have frequently noticed that when in shore, on the same rock with other Seals, they do in the near them, is a little way spart. They are but few in number, and it cannot contrary as all so shy as the Common Seal, mor so solitary as the Tapvaist."

THE SEAL.

PLATE VI.

Phota bicolor, Cuv. Pied Scal of Pen. Shaw, Bingley, Fleming.

Though there are make data by which to determine the to which this Seal belongs, yet as associated with British species, this probably the best place introduce the scanty notice which we have of it.

A curious mistake was committed in relation this Seal. Pennant, who first described, and furnished good engraving of it, considered it the the as the White-bellied Seal of Buffon, and attached this appellation as synonym. The next he noticed in his treatise the Monk Seal of Herman, so making this last distinct from that of Buffon, who, however, had described the identical animal which so accurately examined by Herman. Dr Shaw followed Mr Pennant in his errors, which led Baron Cuvier to remark—"The Seal (Ph. bicolor) which Pennant regarded as a variety of the Ph. sentre blane is very far from belonging to that species."

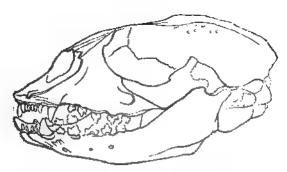
Om. Fom. v. 215.

figures without perceiving there is a great difference between them.

It | true, that, with regard to this creature, - desiderate all the interesting and accurate information which we have regarding the Monk Seal. Though it by thousands, it examined by The respect, however, which we to the of the celebrated Pennant forbids altogether disregard his indication of it. "I first," says he, "saw this Seal at Chester; it taken taken that city in May 1766. On the first capture its skin maked, like that of the Porpoise, and only the head, and a small spot beneath each leg, me hairy. Before it died the hair began to grow an other parts. The fore part of the head was black, whilst the hind part of the head and the throat were white; beneath each fore-leg there was a spot of the colour: the hind feet were a dull white colour; the rest of the animal was entirely black. It man probably woung one. Its nose was taper, and elongated, and the feet exhibited the usual peculiarities of its congeners." Mr Jenyas, in the "Manual of British Vertebrate Animals," remarks, that this Seal is probably only a variety of the Common Seal.t

[•] History - British Quadrupeds, vol. ii. Edition,

[†] See Mannal, &c. 1895, p.



THE HARP, OR GREENLAND SEAL.

Ph. Granlandica, Mot.

PLATE VIL.

SPECIFIC CHARACTERS.—Molars arranged in a straight line, with a small interval between them; anterior tuberole obsolete; posterior margin of palate-bones almost directly transverse.

Ph. Granlandies, Mul. Fab. Denn. (No. 376.) Calcophalus Granlandiess, F. Cav. Less. Identified by Baron Cuvies with the Ph. Oceanica of Lepechin. Attersork of Grants. Semilunaris Boddert; Crescent Scal of Buff. Hurp Hall Half-Moon Pen. Shaw, and Newfoundland Hunters.

By glancing the synonyms, it will be observed Muller, Fabricius, and Crantz, are the principal authorities for this Seal. Crantz states that mearly nine feet long, which, judging from the observed of the far more accurate Fabricius, is a great exaggeration.

light grey colour, with a black marking on back, like two half-moons. This marking accurately corresponds with that represented in plate, which Major C. Hamilton Smith appears to have taken from a specimen in the Museum of Prince Maximilian of Neuveid. Crantz designates it neither Grænlandica Oceanica, but by the cular Attersoak. Fabricius, after identifying it with this Attersoak, tells us that his Groenlandica is six feet long; that its dental formulary = 5.1.8=38; colour is white on the forehead, with m great moon-shaped marking of a black colour me the sides. The muzzle is said to be very prominent; and the eyes, ears, tongue, and feet, to be the same as in the P. vitulina. Crantz' account of the successive markings is not very specific, yet as bearing on the difficulties of distinguishing species. = shall subjoin it. He states that, when born, the Groenlandica is quite white and woolly,† whereas other kinds amooth and coloured. In the first year it cream-coloured; in the second grey; in the third painted with stripes; in the fourth spotted; and in the fifth it man its half-moons, an the sign of its maturity. Baron Cuvier remarks that he possessed skins both of the adult and young. He states that the fur is drier, and adheres closer to the skin, freer of wool at its base than other species; each

See Cavier,-t. ii.

[†] Lepschin maintains a mistake, and applies only to a of the Seal. Act. Acad. Scient. Russ. Potrop. Au. 1777.

marking coincides generally with the preceding; the bands and spots become and more dark with age.

Pabricius that in Greenland this species in great numbers, in the deep bays and mouths of rivers. Twice vear the herds leave the coast; first in March, returning in May; and again in June, reappearing in September. They bring forth their young in spring, having one, - rarely two, at a birth, which they suckle a fragments of ice far from shore. They never ascend the fixed ice, but live and sleep near the floating islands in vast herds. Among these islands they are sometimes wimming in great numbers, having one for their leader, who seems to act as sentinel for the security of the whole. They devour all the kinds of fish, having a preference for the arctic salmon, and not refusing shell-fish. When engaged in feeding, and to the surface to breathe, he raises his head only above water, and without changing his place quickly dives again. They seldom appear solitary upon the wave, principally swimming and fishing underneath, sionally raising their heads when devouring larger prey. They swim in a variety of ways; sometimes their back, often on their sides, occasionally whirling about if to amuse themselves. They frequently sleep - the surface of the water, and, upon the whole, regarded incautious, especially upon the ice.

is alleged that species has a great dread of the Sperm-Whales, which in numbers pursue them the shore. The remark probably applies to genera, both of Seals and of Whales; and of the Grampus it has been stated, that if he perceives Seal basking on floating ice, he will do best to upset it, beat it off with his into the water, where it becomes an easy prey. The Green-landers frequently take advantage of these Whale hunts, and when the Seals hemmed in, join the pursuit, and come in for a large share of the booty.

Crantz tells me that "this is a careless, stupid Seal, and the only one which the Greenlanders, when quite alone, will venture to attack. This he does in his Kajak, which is shaped like a weaver's shuttle. Thus equipped, away he goes with as high a conceit of himself any Mr Captain in his ship. When he spies the Seal he tries to surprise it unawares with the wind and sun in his back, that he may not be heard me He makes hastily, but softly, towards it, in he reaches within four me six fathoms. He then takes hold of the oar in his left hand, and the harpoon with his right, and me away he throws it at the Seal. The moment the instrument is fixed, the Greenlander must throw the attached buoy into the water - the side that the Seal dives, for that he does instantly like a dart. The Scal often draws the buoy along with it under water, and it so wearies itself, that it must come up again, in about a quarter of lour, to take breath.

The Greenlander hastes to smite it with his ong lance; thus he keeps darting at it is quite spent, when he kills it outright with his small lunce; lastly, he blows it up a bladder, that it may swim the more easily after his Kajak. In this exercise he is exposed to the most and greatest danger of his life. For if the line should entangle itself, as it easily may in its sudden and violent motion, if it should catch hold of the Kajak, in of moar, or the hand, must the neck, as it times does in windy weather, or if the Seal should turn suddenly to the other side of the boat, it cannot be otherwise than that the Kajak must be overturned. and drawn down under water. On such desperate occasions the poor Greenlander stands in need of his to disentangle himself from the string. and raise himself up from under water several times successively. Nay, when he imagines himself to out of all danger, and comes too ____ the dying Seal, it may still attack him; and a female Seal that has young, instead of flying the field, will sometimes fly at pursuer in the webement rage, and do him mischief, or bite a hole in his Kajak, that he must sink."*

It would appear that this species is occasionally visitor on our British shores, probably borne along in the fields of ice in which it delights. This belief is grounded on the fact that two crania, belonging to Dr Riley, of individuals captured in the

Crantz, Greenland, p. 154.

Severn, appear to belong species; and also, that the cranium figured by Sir E. Home in the Phil. Trans. 1822, see taken from Seal that was shot among the Orkneys.

The oil extracted from this Seal is to be in greater quantities than from any other of the North-regions, and is likewise considered the best. The skin is used to the boats, and when undressed for tent coverings, and sometimes for body clothes. On the west side of the White Sea the skins of the young are manufactured into boats, which are quite water-proof, and might, on this account, be advantageously introduced into this country. Cuvier states that the fur of this Seal is one of the most important articles of trade among furriers.

" See Bell's British Quadrupeds, vol. i. p. 270.



THE OCEAN SEAL.

Ph. Occasion .- Lapuchin.

PLATE VIL*

Ph. Ogranica, Lepechin (Act. Petrop. 1777, t. i.) Desm. No. 373, Blainville. Calocephalus Oceanicus, Loss.

NOTWITHSTANDING the very high authorities now named, it is with much hesitation that we introduce the Ocean Seal as a distinct species. Ba-Cuvier identifies with the immediately preceding, viz. the Greenland; but De Blainville, Desmarest, and Lesson, distinguish the two animals. Lepechin, the highest authority on the point we possess, has a thorough conviction that they differ; and he grounds this opinion not upon any variation in the dental apparatus, but chiefly upon the different markings of the young. He, at the maintains that the which Crantz describes at the Greenland Seal is identical with his. It is chiefly then from deference to these distinguished Zoologists that me give the Oceanica. ■ distinct place in our enumeration; and — pay this tribute the more willingly, we the description acrefully drawn up by an eminent Naturalist.

This animal, according to Lepechin, exactly sembles the Common Seal, and is distinguished from it only by its greater size, and the colour of its coat. The head is round, the mouth somewhat prominent and obtuse; the upper lip is tumid, thick, and marked with a furrow in the middle; it is longer than the under, which, in its turn, is what pointed. The number of teeth follows:-In the upper jaw there are four incisors, conically acute a the middle ones the smaller, those next the canines the stronger. The incisors in the under jaw are only four, and not so sharp." Next to the incisors in both jaws is ___ canine, stronger and sharper, five lines long, and curved inwards; then there are six molars on each side of both jaws. three-pointed, the middle point being the longest and strongest. The teeth are so disposed, that when the animal shuts its mouth there is me interspace left, and the larger points of the upper teeth correspond with the smaller man of the under ones, m that their prey, when caught, receive a deep wound with a single stroke. The tongue is cleft the extremity, and furnished with rough papillar, bent inwards. The eyes large, and prominent; the iris is black, the pupil lucid; sort of wrinkled skin, very firm and bare, supplies the place of eve-

There is evidently some mistake in this enumeration, typographical otherwise we pretend not decide. We give it in the original.

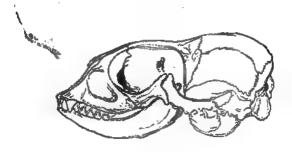
lids; it has membrana nictitans. The aperture the is ovate, surrounded with puckered skin, so to shut. The neck is robust, formed like a trift sated cone, though not very distinct. The nails are black. The extreme toes on the hind feet the largest, the middle is the shortest, that the foot is crescent-shaped. There but two mamme, and the dam has but in birth.

The colour of the head is me obscure chestnut, nomewhat inclining to black. The rest of the body dull white, much the clearest at the belly. A great marking occurs the shoulders, of the same colour with the head, which forks downwards on either side, and nearly meets again on the posterior part of the abdomen; it is somewhat in the form of a half-moon, and is more less surrounded with irregular spots of the same colour: this precise colouring is always present. The young ones are, during the first year, of a clear ash colour in the back, lighter below, and are everywhere spotted with a few black spots of a round and oblong form. In the second year the ash colour becomes somewhat whiter; the spots become larger and distinct, and hence they acalled spotted. This colour the females preserve unchanged; but the males, they advance in age, undergo a further change m stated above, and m hence named winged Seals.

These Scals love the colder parts of the sea; hence they only appear along the ice in the White Sea; and having, about and end of April, given

birth to their young, and reared them for some time, they disappear with the ice, in the great frozen ocean, leaving only the young ones, which remain till the ice which adheres to the shore is the wed, when they too follow the others. The fishers report that round Nova Zembla, where the ice abounds, some are to be seen at all

This Seal, according to an author, is hunted for its skin and fat. The skins of the full grown are used an answer to writing desks, whilst those of the young an manufactured into hose, for they are very tenacious, and when properly prepared, they keep out wet better even than prepared calf-skin. The fat is very useful to curriers.



ROUGH OR BRISTLED SEAL.

Ph. Hispidus, Schrenz.

PLATE VIIL

SPECIFIC CHARACTERS.—Molars somewhat more simple those of the vitulina; head more depressed; posterior margin of palate deeply notched.

Phoca Hispida, Schreb. Calocephalus Hispidus, F. Cuv. Ph. Fætida, Feb. Desm. No. 377, Neitsek Cr. Baff. Rough Seal, Pen.

THIS Seal, which has been long catalogued in the works of Systematists, seems to have been accurately defined and known, though to a considerable extent obscured by the confusion which involves the whole subject. After Crantz, it was next described by Fabricius with his usual accuracy and care, and his put into English dress by Pennant, in his Arctic Zoology, under the name of

Rough Seal. No representation of it, however, has been published in this country, and little has since been added to its history either by English or French Naturalists, though Baron Cuvier sientions he in possession of two crania of the species which were sent from Copenhagen.

We cannot, therefore, do better than first present the description of the author of the Fauna Groenlandica. He states that it is the smallest of all the species which are found in the Northern regions. scarcely ever exceeding four and a half feet in length, and usually reaching only four feet, with a perpendicular height of ten inches. The head is short and round, the muzzle extending to about one-third of the whole head. The whiskers white, with a few black hairs; they am sharp, compressed, and a good deal curved at their extremities: the eyes mall, the pupil white, and the iris brown. The body is almost elliptical and slender; the back somewhat gibbous; the belly flat, especially near the fore paws: the hair is thick set, somewhat erect, rather long, soft and fine, with curly wool mits root, The colour is on the back brownish, intermixed with white spots, and on the abdomen is white, with a few brownish spots; the young are almost without spots, but have the back of a somewhat livid colour, with the belly white. The old have the most distinct markings, and in them the snout almost naked, with few or hairs. The old males have most disgusting smell, which annoys. even the Greenlander.

This account has all the semblance of accuracy | and so far as the markings of the skin - concerned, trively agrees with one before us, and from which the colouring of plate is taken. Crantz save. "the hair does not lie smooth, but is bristly. and intermixed like pig's hair;" and again, it is said "to be bristled like the Polar bear." On making enquiries respecting Scale-skins at a respectable dealer,* he informed mu that he was quite familiar with two or three kinds, brought from the Northern fishery, and which were perfectly distinct from each other, and of a marked and uniform appearance. Some of these he immediately showed us, and was kind enough to supply for our use. The skin, now before us, is precisely four and a half feet long; and, according to our intelligent informant, those of this sort never exceed this length, whilst their breadth is proportionably small. Its markings, too, are invariably nearly the same, and could not be better described than in the words of Fabricius. The robe is composed of long manner bairs, meet of which, when dry, have a tendency to curve somewhat backwards, and of soft woolly hair beneath. Most of the long hairs white, but in those parts where the skin has a brownish tint, of this last colour intermixed, which produces a grizzly appearance. The colour varies much according to the light in which me regard the robe: In lights it has silvery brightness, and in others I is quite dull. Crantz says I

[&]quot; Mr Boswell, Nicolson Street, Edinburgh.

This species, according to Fabricius, scarwig ever frequents the high seas, but delights in retired bays, and in the neighbourhood of the ice of the coasts, from which, especially when old, it very unwillingly departs. Its food is all kinds of smaller fish, such as haddock, but especially lobsters and their congeners. The period of gestation is eight months, and the young are brought forth in February on the fixed ice, its proper haunt. Here has a hole, not so much for breathing as for fishing, which it remains usually solitary, rarely in pairs. It is the most ineautious of Seals, both in the water and the ice; whilst asleep on the wave, it is sometimes pounced upon by the eagle and horne to shore.

According to Giesecké,* many thousands of this species killed every year the West coast of Greenland, in lat. 72. Though they emit a disagreeable smell, yet he states they are notwithstanding eaten with great avidity by the Northern Greenlanders.

Their most valuable product is their oil; but many thousands of their skins also regularly imported into these countries, where they are used in the manufacture of trunks, and for other domestic purposes.

^{*} Article Greenland ill Edin, Encyclop.

THE HARE-LIKE SEAL

Ph. Laporina.

PLATE IX.

Phota Lepetina, Lepethin, Cav. Des. 374, Blainv. Pennant, Shaw. P. Lepethini, Less. Here of the Sez of Rusmins.

THE only other species referred to this genus which, with any satisfaction, we can adduce, is the Hare of the Sea of the Russians. Lepechin's is the first and almost the only account of this Seal hitherto presented to the public, the descriptions of nearly all the Systematists consisting merely of copies from him.

He states that its length is six and malf feet, and its greatest circumference five feet. The head is elongated; the upper lip as if swellen, and thick like mealf's; the whiskers me strong and thick, covering the whole front of the lip; the eyes me blue, and me pupils black; the fore paws are short

^{*} Acta. Acad. Scient. Imp. Petropol. ann 1778.

and feeble, ending abruptly; the membrane of the hind feet is not lunated, but straight. Its colour uniform dull white, with straige of yellow. The in never spotted; the hairs erect, and enterwoven, and soft like those of the hare, especially when the Seal is young. The skin is very thick; and the dental formulary marks it belonging to this genus. This species frequents the White Sea, during the mouths, and ascends and descends the mouths of its rivers with the tide, in quest of prey. It is also found on the coasts of Iceland, and within the Polar circle at Spitzbergen and Kamskatka. It is appropriated to the sits congeners.

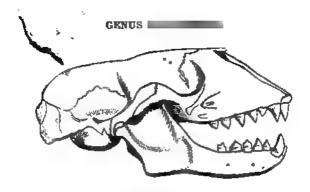
Pallus makes the following remarks on this Seal. "There are many kinds of Seals in the frozen ocean, and this species, known among the Samoyedes as the Hare of the Sea, differs wholly from the common kind. The young Hares of the Sea. whose skins I have procured, are white as snow, and shining like silver. Their hair is longer than that of other Seals. - that if the head and feet were removed, the skin might be mistaken for that of a young sea-Bear. It is in spring that the Samoyedes usually hunt these Seals, on their leaving the water, near the months of the Lina and other rivers, through those holes in the ice which the Seals keep open for the purpose of respiration. They place a number of planks nailed together the neighbourhood of these holes, and fix a rope to them. They then conceal themselves behind the neighbouring masses of ice, and soon as the have the the deep, and down to bask on the ice, that pull the planks the hole, by means of the rope, and so prevent their return. They then despatch their victims.*

A young Seal, taken on the West coast of Normandy, and brought to Paris, suspected by Baron Cuvier to be a whelp of this species, and F. Cuvier has arranged it as such. Though me have great doubt of the accuracy of these conjectures, here supply the interesting remarks of the latter gentleman. Its length we two feet nine inches. It and of a yellowish-grey colour. "I had," says M. F. Cuvier. "this animal under my care for a considerable time, and it easily tamed. When it teased it puffed like a cat, and when much irritated it barked feebly. It never attempted to bite in self-defence, but scratched with its nails. It never ate except when under water: its nourishment was the fish of the ocean, and we could never get it to take those of fresh water. † He was peculiarly attached in the old mann who had core of him. He soon came to recognise her at the greatest distance it possible for him to eapy her; he kept his eye upon her so long as she are in sight, and are to her as soon m she approached his enclosure. It may be suspected that hunger augmented his apparent affection: and it was probably the cravings of that appetite, and the attention he paid to every thing affecting

Way. Palles, t. iv. 4to, 123.

Diet. d'Hist. Nat. p.

it, which is him to observe the place where his nourishment to kept, though sixty paces distant, and used for many other purposes. If he is free when to food was being brought to him, he ray the urgently solicited it by the motions of his head, is more by the expression of his countenance."



Generic Characters.—If uzzle very deep, obliquely truncated; head very flat; molars of the upper jaw simple, those of the lower with an obsolete tubercle before and behind the principal one.

THE GREY SEAL.

Halicharus Griseus .- Nettasoa.

PLATE X.

SPECIFIC CHARACTERS.—Molars differ from those of the Vitulius in the absence, at least in most of them, of any small tubercle; the posterior margin of the palate is directly transverse; the palatal forumina on the palatal bones.

Halicherus Griseus, Nils. Phoca Halicherus, Thieneman. Ph. Gryphus, Fab. Grey Seal,

BEFORE leaving the shores of the northern hemi-

aphere, ahall introduce Genus Halichœrus, which has lately been established by Professor Nilsson. His work being still unpublished, - have not learnt, his arrangement we division of the Genus; and our information has principally been obtained from Mr Bell's recent work, which is more especially confined to British species. Mr of Dublin has supplied the principal information regarding this Seal, and we shall enrich our pages with several of his interesting observations. "When I was quite a child," remarks Mr Ball, "I took much pleasure in watching Seals, from the coasts of Cork and Waterford, and early became impressed with an idea that I could distinguish at least four species. Some years ago, on stating my opinions to some Zoological friends, I was induced to set about collecting specimens and information from various parts of the coast. For a considerable time I procured only species; and, finding this labelled in our Phoca Vitulina, I took it for granted it so, until I procured a cranium of a very different specles from Sligo, which, upon examination, I found to be the true Ph. Vitulina. I then sought to ascertain to what species the former specimens belonged, and searched in vain. Failing to obtain information, I induced to bring the matter before the British Association; when Professor Nilsson recognised the craniam I produced as those of the Seal described by him as the Halicherus Griseus,

My observations on the habits of the animal do not altogether accord with those of the learned Pro-

factor, whilst here I have seen it often in small parties, d'learned from fishermen that they have noticed cany thirteen congregated rock.

Colour, in the present instance, appears to be a character of little value; for, in the many specimens I have seen. I do not remember that any two were precisely alike. The very young females seem to be generally of a dull yellowish white, with rather long hair, which falls off in about a month as six weeks, and gives place to a shorter and more shining coat, variously blotched with grey: this is brighter at first, and gradually grows und dull, and the blotching indistinct the upper parts, as the animal advances in age; whilst in the breast and lower parts, the blotchings in some specimens show almost as distinctly the spots of leopard. From peculiarity in the hair of the adult, it being considerably recurved, and m if its upper surface were scraped flat with a knife, the animal, when dry, and with its head turned towards the spectator, appears of uniform silvery grey, whilst viewed in the opposite direction, it appears altogether of a sooty brown colour; the spots or blotches being only visible on a side view. The only male specimen I possess died young : it has long yellowish hair, slightly tinged with brownishblack on the back; it is black on the muzzle, chin, and cheeks, extending round the eyes, but not to the upper part of the nose; and the palms of the fore-paws black.

"It occurred to several years since, that I could by going to the mouths of their caves, and striking them with a harpoon me they dived out. Acting m this, MAugust 1829, I went to Howth properly equipped, and took a position at the mouth of a cave, in which I could hear inbaying loudly like large dogs. On making noise from the boat, several Seals passed out with great velocity, the depth of about eight feet : one I struck with an our, and another with harpoon, but not effectually, it gave way after a short struggle. Learning from the failure, make ready for mext, which I could distinctly botof the water, attentively watching us, times advancing and again retreating: it seemed scared by the harpoons, which the friend who me and I held me deep in the water as only to offer it to pass. After a considerable time spent, weapons a little, when it made a mescape, but in vain, m both mm harpoons struck it, mine penetrating to its heart. It the of my hands, though between two

three inches in diameter; I then pulled out I boat to sea, and, when compelled I come to the surface, we fired four shots into it before it ceased violent exertions. The quantity of blood was enormous, spreading to I great extent I the surface of the water. I estimate the weight of the animal, though in poor condition, to been upwards of 500 pounds: its akeleton I feet two inches; it as a very aged female, judging from the of its teeth; yet it appeared to be suckling young, I there I in the mamme."

After this interesting account, Mr Bell well remarks—"It is impossible not to be forcibly struck with the contrast between the cerebral development of genus and of former, and the relation between the difference of structure, and their susceptibility of domestication. It is exactly logons to the distinction between the crania of Baboons, and those of the higher groups of quadruanimals."*

now to be ascertained that the large specimen which has a long existed in the British Museum under the name of the *Phoca Barbata*, belongs to the species now under consideration, and not to the genus we have just left. That animal was exhibited and in London in 1742, but its place of capture is not reported. We have seen that the Grey is the prevailing Seal on the southern thores of Ireland. One individual has likewise

Bell's Brit. Quadrupeds, vol. i. p. 278.

been taken in the Severn, and belongs to the Bristol Institution; it supplied the subject of Mr Bell's wood-out, whence our plate is taken. The London specimen, described by Dr Parsone, was seven and a half feet long, and regarded m quite young. On the abdomen there appeared to be four mammes, whilst other species at stated to have only two. The heart may long and flabby, with a large foramen ovale. The most singular point noted, however, is, That, in the lower stomach, there about four pound weight of flinty pebbles, of which sharp and angular, as if the animal chose them for cutting the food."

MacGillivray informs us that he has two specimens of this Scal from Orkney, examined one in Harris, and has reason to believe that it is not in the Outer Hebrides. Mr Edmonston also gives notice of its occurrence in Shetland.

The usual habitats assigned for this species by continental writers we the northern shores of Europe, and the coasts of Pomerania.

Phil. Trans. vol. xlii. p. 383.

GENUS STENORHYNCUS ... F. Cut.



Stenorbyness, i. c. Narrow-muzzled Seal,

Baron Cavier has very happily expressed it in these words:—
"There are four very pointed incisors in each jaw; the two middle ones above as smaller, and are inserted farther back in the than the others; the molars are deeply divided into three long points, which are conical, and somewhat booked."

THE SMALL-NAILED SEAL.

Ph. Leptonyz .- De BLAIMVILLE.

MINISTER XI.

Specific Characters.... Denial formulary, that of the genus; shape singular; nails very small.

Phoca Leptonyx, De Blainv. Desm. No. 379. Steaorhyacus Leptonyx. F. Cuv. Less. Small-nailed Scal.

Ir about the year that M. de Blainville, on

visiting London, found, in the Museum of the Royal College of Surgeons, among other crania of Seals, one without a label, which differed from any he had previously examined, and which, therefore, he could not satisfactorily refer to any known species. When thus perplexed, he met with another cranium at Havre, or rather it as a stuffed Seal. retaining the skull, and forming a part of the Collection of M Hauville of that town, in which the peculiarities existed. M. Hauville's preparation a very beautiful one, between and eight feet long; the body elongated, the form of the head, eyes, and nostrils, was not unlike that of the Monk Seal, to be afterwards described; the mystachial bristles were short, simple, and smooth; no external were be found, not even an orifice; the anterior paws were falciform, the toes decreasing in from the first to the last, the nails very small, that me the thumb not being terminal: the external toes of the hind flippers the largest; and all of them had nails, which, however, extremely small, hence its ____ Leptonyx; the tail was short. This specimen believed to have been brought from the Southern Ocean.*

In the year 1822, the late Sir E. Home published an accurate engraving and account of the cranium which had attracted M. de B.'s attention, thus confirming the accuracy of his report, and supplying the additional information, that the Seal from which

Jours. de Physique, t. zei. p. 297.

the cranum will been taken was caught by a wheler New Georgia.*

Finally, Hauville presented his specimen to the Museum of the Jardin des Plants at Paris, where it fell under the examination of Baron Cuvier. He minutely that it was seven feet long, and the head ten inches: all the upper parts of the body are dark grey, somewhat tinged with yellow; the yellow colour gradually predominates the sides, owing the presence of a great number of small yellow spots; whilst the flanks, in under part of the body, the feet, and a portion immediately the eyes, are of pale greyish-yellow colour. This specimen, which has supplied our plate, was brought from the Falkland Isles.

We are not that a single fact respecting the Natural History of species has been supplied; and, accordingly, we proceed to the only other known species of species, viz.—

^{*} Phil, Trans.

[†] IIII III Scien. Nat. pl. 44.

THE LEOPARD SEAL.

Ph. Leopardina, ... JAMESON.

PLATE XIL

Phoca Leopardina, Professor Jameson. Leopard and of Weddelli, Otaria? and Stenorhyneus Weddellii, Less.

We feel happy that can present to the student of Zoology a correct delineation of this very peculiar and curious-looking Seal, taken from excellent specimen in the Edinburgh Royal Museum, presented by Captain Weddell, who captured it in the Southern Ocean. We believe it is the only specimen in Britain, or in Europe, and, with the exception of the representation given in Captain Weddell's "Voyage towards the South Pole," is the only published one; in that it is so far in the Repository of Natural history.

The very scanty information supplied by Captain Weddell, embraced in the few lines following, shall now lay before the reader. "Having some Sea-Leopards on shore, (on the South Ork-

neys,) I the second mate to take them, who soon returned with six he had captured." This creature resembles the quadruped of the man pame in being spotted; one is deposited in the Edinburgh Museum: and Professor Jameson has kindly municated to us a description of the animal. He considers it mew species of Phoca, and gives it the following distinguishing characters:- "Leopardine Seal. The neck long and tapering, the head small the body pale greyish above, yellowish below, and back spotted with pale white. This species to be referred to the division Stenorhyngue of F. Cuvier: the teeth, however, do my quite agree with those of III Ph. Leptonyx, nor with those of Sir E. Home, figured in pl. of Phil. Trans. 1822," W. again says-"In the evening the boat returned, having coasted these islands for fifty miles. They found Sea-Leopards, the skins of which they brought on board." About week afterwards he writes-" In the evening the boats returned with two Seals, and ten Leopard skins;" and once more, when off the Shetlands, "Some Sea-Leopards have been seen." Beyond these sentences there is not in the volume before us another word about this Seal, of which, however, he talks as familiarly of of our domestic animals. The scaptiness of the details, we have no doubt, arose from his conviction that Naturalists man quite familiar with this animal, when in truth it was to them wholly unknown.

We me therefore induced to give a somewhat tended description. As seen in our plate, the head is proportionally very small, and produced; the neck also is small, long, and tapering; the body largest about the middle, and gradually tapers again towards the tail; the fore-paw is small, and devoid of all projecting membrane; the first finger, (or thumb,) as in most of the true Phoca, is by much the longest; the others diminish gradually, and all are furnished with sharp black claws, slightly curved and grooved, carinated under side; the posterior extremity has neither nails nor projecting membrane. The hair is rather soft, and thin set; it covers the whole of both extremities, below well above. a character not found on many of the Otaries; the colours, which we take from Weddell, pale greyish above, yellowish beneath, and the back spotted with pale white. There is no trace of external ear; the eye is in the perpendicular over the angle of the mouth, distant three inches. The dental formulary is 513=32; the incisors are conical in their form, and somewhat curved inwards; those in the upper jaw much the longest, and the two middle are placed further within the mouth than the other two, and an also much smaller; the canines are conical, they are very much developed at the base, and slightly grooved: the body of the molars is composed of three parts, the tral conical part by much the longest and largest, with a small tubercle each side. We shall some measurements.

1	eet.	In.	Li.
Total length (over the back) from tip of smout			
to tip of tail	9	10	- 0
Length of tail		9	6
From spont to anterior edge of the base of fere-	•		
PAW-02300-3200-3200-3200-3200-3200-3200-32	3	.5	0
From bure of posterior margin of fore-paw to the	•		
tip of the tail	e	4	
From base of one fore-past to base of the other	•	-	_
across the back	4	1	0.4
			_
Circumference III apper part of the neck	1	11	0
round the body, broadest part	6	4	0
shove the tail	2	3	0
Length of fore-paw, round margin,		- 1	0
posterior margin		8	0
Greatest breadth of fore-paw		4	10
Greatest length of posterior extremity		5	6
Greatest breadth, toos being extended		4	0
Breadth base of the		4	Б
Distance between inner angles of the eyes		3	6
angle of the mouth, and tip of		-	•
lower jaw		4	0

The only habitats mentioned by Captain Weddell the South Orkneys and Shetland, and of its habits, &c., he says nothing.

The learned and author of the Manuel de Manuelogie has designated the Sea-Leopard of Ctary, without assigning any analogy connected with the position of the fore-paws. We need scarcely add, this is a mistake. The acute author of the article Phoque, in the Dict. Classique, again, makes this synonymous with the Long-necked Seal of Parsons—the Longicollis of Grew, subsequently alluded by Pennant, Shaw, Desmarest, Cuvier, &c. By turning to account of the Fur Seal,

that excellent Naturalist, to whom see anxious to confess ourselves indebted for much instruction, may see that this is also a mistake, which we have been able to detect, chiefly through the information afforded by our intelligent countryman, Mr Weddell.

GENUS PELAGIUS.



We now proceed to the Genus Pelagius of M. F. Cavier, which he differs from his former genera more than they differ from each other. The head, instead of having the short of the former, or the slender of the latter, has one which is broad well elongated at its extremity, with arched chaufrin. The teeth must be senternity, with must be described by the Leptonyx, but their form is different. The upper incisors indented transversely at their edge, so that the lower incisors, which we simple, fill up these indentations when the Jaws are shut. The molars we thick and conical, and have only very minute rudimentary points, in front and behind.—There is but the apparentiated species, which is

THE SEAL.

Рр. Монасина.-- Нермани.

PLATE XIII.

Phoes Monachus, Hermann, Gmel. Derm. No. 372. Pelagius Monachus, E. Cav. Scal, M. Cav.

BARON CUVIER remarks that, after the Common Seal,

• Men. d'Hist, Nat, | Berlin, t. iv.

this is perhaps the species best known. In frequents the southern shores of Europe, and has frequently been examined by those who are competent to the task. Considering its habitat, and the old descriptions which remain, it probably the species which most familiar to the ancients. A property which ascribed its skin may be regarded m striking exhibition of the extent of superstition, and of conscious guilt and timidity. By the undaunted Romans the skins of these were considered man efficacious preservative against lightning; and hence tents were constructed of them, under which they sheltered themselves during thunder storms. Il is also mentioned by Suetonius, that such was the Emperor Augustus' dread of lightning, that, while at his usual place of residence, he resorted to a vanited retreat under ground, on the approach of thunder; and when - journey, he never travelled without carrying along with him one of these skins.*

For the description of this species we turn to the lively pen of Buffon, and the minute details of M. F. Cuvier. The former has given a particular description of a male, and the other of m female, which were different times exhibited to the public. Both were taken in the Adriatic, and they agreed exactly in their general appearance; third, captured in the same Sea, which was examined by Baron Cuvier in the Marian of Turin.

Memoir on Thunder, by M. Arago. Edin. New Phil. Journ. vol. xivi.

The White-bellied Seal, says Buffon, alive in the month of December 1778. In aspect mild, and its disposition not fierce; its eyes quick and indicate intelligence, or, all events, they express the sentiments of affection and attachment to its master, whom it obeys with the utmost readi-At his order we have seen it lay down its head, turn in various directions, roll round and round, raise the fore-part of its body quite erect in its trough, and shake hands with him. It responded to his voice and signs by a hoarse sound, which seemed to proceed from the lower part of the throat, and which might be compared to the hoarse bellowing of voung bull; it appeared the animal produced this sound both in inspiration and expiration, but it was clearer during the former, and rougher during the latter. Previous to being tamed. I bit its master furiously when interfered with, but when subdued, it became quite mild, so that it might be handled with me freedom. You might thrust the hand into its mouth, and rest your head on that of the Seal. When its master called, it answered, however distant he might be; it looked round for him when it did not m him, and on discovering him after m absence of few minutes, never failed to testify joy by a loud murmur. Some of its accents weet and expressive, and seemed the language of pleasure and delight.

But, though its natural disposition mild, yet, from probably connected with a confinement,

it was liable occasional of irritation and violence. At these times was dangerous, and ferocious, for then it knew no one, regarded its master's authority, that he could not approach it till after several hours return of calm composure. On cocasion it seized him by the leg, and it with much difficulty it forced to let go its hold, by forcing an instrument into its mouth: at another time attacked great dog, extensively lacerated its head with its teeth, and displayed the blindest rage against every object that in its way. These paroxysms becoming worse and worse, it at length pined away, and died in August 1779.

The period between its several inspirations very long, and in the interval the nostrils accurately closed, during which time they appeared like two longitudinal slits on the end of the snout. The creature opened them to make strong expiration, which immediately followed by an inspiration, after which it closed them as before; and often allowed two minutes to intervene without taking another breath. The breathing accompanied with a loud souffling noise. This animal, like its congeners, slept frequently during the day; its snoring heard at a considerable distance, and it could not be raised without difficulty from its slumbers. When drowsy, it did not promptly attend its master, and was only by putting food under its very and could be excited to its accustomed energy wivacity. In then raised its head and the upper part of its body, supporting itself on the fore-paws to the height of the hand which held the fish; for it scarcely satisfied with any other aliment, having preference for carp, and still more for cels; these, though raw, seasoned to its taste by rolling them in salt. It required about thirty pounds of these live fish every day; it greedily swallowed the cels entire, and sum the carp which three entire, it subjected them to preparation, by crushing their heads with its teeth, then partially gutting them, and concluded by gulping them head foremost.

The keepers of this animal stated could live for days, and for more than month, without entering the water, provided it were washed every evening with clean water, and had plenty of salt water to drink, for, when drank fresh water, and especially if it must not quite pure, it always sure be injured by it.

This individual seven and a half feet long; its skin seven covered with a short smooth shining hair of a brown colour, mixed with grey principally upon the neck and head, where it separated; the fur thicker on the back and side than on the belly, where there are a large white marking, which mounted up upon the flanks. The nostrils were neither inclined, see the flanks. The nostrils were neither inclined, see the placed as in terrestrial quadrupeds, but extended vertically see the extremity of the snout; they see three see four inches long, and when open, about two inches wide;

they then of val shape, contracted their extremities. The eyes were large, full, of brown colour, and like those of an ox. When the creature is long out of the water, the eye becomes bloodshot, especially the angles. The mouth, too, is large, and surrounded with strong whiskers, almost like fish bones. Instead of the external there only a small opening which was almost concealed in the skin, and, though it was scarcely longer than a line, the animal had, nevertheless, very scute hearing.

This Seal me taken on the coast of Dalmatia, about 200 miles from Venice, and lived in state of domestication nearly two years.*

To this detailed description of Buffon we shall subjoin from the interesting memoir of M. F. Cuvier such particulars as throw additional light the animal's organization habits. The Seals," he remarks, "are animals, so very remarkable for their intelligence and organization, that we should assiduously collect every fact that can elucidate their history. These considerations have determined me to give a description of a female which are taken in 1811, and which is present (1813) exhibiting to the public, and has not yet, I believe, been described. For two years it has been kept in a trough, which scarcely exceeds its own dimensions, being only foot longer, and two feet broader, than itself. It every day receives several pounds of fresh

^{*} Hist. Naturel. Supplem., t. vi. p. 310.

[†] Ausal, du Museum, t. zz. p. 387.

water fish, and usually spends nine at ten tive hours in water ten inches deep. At the close of the day the water is removed, that the animal may be dry during the night, and, in spite of this artificial mode of life, it enjoys excellent health.

"It would be a mistake to suppose that Seals are deficient in intelligence; the contrary, it is certain that they have than most quadrupeds, where even than dogs originally. They (some of them) are tamed without difficulty; they recognise those who feed them, and become attached to them; they also understand and obey them, and finally forget their former independence, and, by second nature, enjoy their society with men.

"The length of this animal is between seven and eight feet, and the general form is very like that of the Common Seal. Its colour in the water is black on the head, back, tail, and upper part of the feet, whilst the chest, sides, and belly, and the under portion of the neck, tail, paws, and sides of the head, of wyellowish light-grey. When it is dry, the black portions me not deeply coloured, and the white parts are more yellow. The skin is everywhere of a slatey colour. The tail is three inches long, and without movement; the eyes are large, and the cornea is very flat in comparison of other quadrupeds; two hairs, similar to those of the lip, are man above each eye; the pupil exactly resembles that of the domestic cat; the nostrils me naturally closed, and open only at the will of the animal; the ear has no trace of external auricle the orifice of the auditory canal III situated nearly opposite the tympanum.

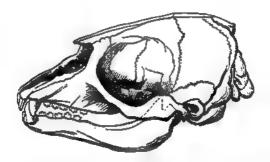
"This Seal devours of food without chewing it, and, after having removed the viscera, it always takes it into its mouth in such of direction that the and scales offer obstacle to its easy passage. It sleeps throughout the live-long night, and cannot be kept awake during the day without the most occasing perseverance. During sleep it is often observed covered with the and at the bottom of its trough, where of course it cannot breathe, and there it continues for an hour at a time."

We have nothing to add to these minute statements, except the remark of Baron Cuvier, that the average length of this species, when fully grown is between ten and twelve feet. We have already remarked, that it has long been known to frequent the Adriatic Gulf, and, of course, the shores of Greece. M. de la Marmora mentions that it is also found on the coasts of Sardinia.

Voyage en Sardaigne, p. 173.

OF F. CUVIRR.





The Stemmstopus, or Crowned-brow of M. F. Cuvier, receives its name from certain soft appendages which connected with forehead and other parts about the cranium. Speaking of Mitrata, M. Cuvier states, it is remarkable for the exdevelopment of the cranial cavity; and the Baron obtained in head of this Seal, when compared with the common cannot be somewhat longer, and much broader, especially in cranial portion; the space is longer and fatter, and the muzzle much shorter. There only four incisors in the part of the muzzle much shorter. There are only four incisors in the part of the muzzle much shorter. There are only four incisors in the part of the muzzle much shorter. There are only four incisors in the part of the muzzle much shorter. There are only four incisors in the part of the muzzle much shorter. There are only four incisors in the part of the muzzle muzzle

THE CRESTED SEAL.

Ph. Cristata .- GREELIN.

PLATE XIV.

Ph. Cristata, Gmel. Deam. S71. Stem. Cristatus, F. Cav. Leonius, Fab. Neitersoak. Crantz. Ciapmutz of Egode, and the Northern Seal-fishers. The Created Scal of Anson Ellis. **

It is not without considerable hesitation we place the Crested Seal in the same genus with the Mitrata. M. F. Cuvier and Lesson associate it with the next genus, (Macrorhinus;) but solely because they identify it with the Elephant Seal, an animal from which it greatly differs. By others, again, it has been identified with the Mitrata; whilst much opposing evidence recently procured shows the inaccuracy of this conclusion. The details within mereach, especially regarding the dental apparatus, are too few an enable us

The name Hooded Soul, given by Pennant and Shaw, as popular French name I Capachen, an regard in pasularly unfortunate, as confounding I species III

fication; but such as have been obtained will be supplied.

For plate of the Cristata we are indebted to a Transatiantic Naturalist, who commends the draughtsman for "the very faithful delineation he has given." The plate elucidates an account of the animal, read by Dr Dekay to the New York Lyceum of Natural History. Though we have been enabled to present min readers with an accurate representation of this Seal, yet we have failed in procuring the accompanying account. It published in the " Annals" of the New York Lyceum, which appeared monthly, and we have been able to procure the 4th number only, containing the plate, but not the 3d, wherein nearly the whole description is contained. We have to add that, for the expressive colouring of pup plate, we are indebted to Mr Boswell, already honourably named on page 168. In favouring with a fine specimen of the skin, he informed that, next to the Rough Seal, this, which is very uniform in its markings, is the most fre-* quently met with in the trade: it as entirely agrees with the following descriptions, that we do not hesitate to supply it as the skin of the Crested Seal.

The following is the description of this Seal, make given by the distinguished Fabricius. Though he applies to it the name of *Leonina*, which is unfortunate in many ways, yet he immediately adds, "Phoca mupite antice cristato," with a crest on its forehead. He says it attains the length of eight feet. The indivi-

dual he had under his examination wo only seven and a half feet long; its teeth corresponded with the account given above, with this addition, that in one specimen he had seen six molars in the lower jaw. He adds, a tuberculous body like inflated bladder. keel-shaped in the middle, covered the anterior part of the head, and m preserved the forehead. This protuberance was confined to the males; the females and young having it quite rudimentary, forming . slight projection on the part. Moreover, in addition to the true nostrils, the male had spurious tuberculous ones, sometimes single, and sometimes double, according to their age. The mystachial bristles were long, whitish, curled, compressed at their base, and obtuse at the points. The eye was large and black, with a brown iris; there was no external auricle, and the orifice was very small. The body of this species is long and robust, covered with long somewhat erect hair, very woolly and thick underneath. The fore-paw is somewhat in the form of a human foot, the thumb corresponding to the great toe, and the others gradually getting shorter. The colour varies according to the age, being darkest in the aged; the head, tail, and feet, are black, so and the other parts, but spotted with grey spots, deepest, however, on the back; the younger are fairer; during the first year they are white, the upper part of the back being slate grey; the second year they me snow white, with a straight line of a brown colour on their back.

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To this account of the accurate Fabricius,

subjoin interesting particulars which are appended by Drs Ludlow and King to Dr Dekay's memoir. Their account of the sac-like follows:-- " About two inches from the extremity of the upper jaw, on the superior surface, arises . tilaginous crest, rapidly increasing in height, as it passes backwards, being about ____ inches in height at its posterior or vertical edge, which is separated into two planes by an intervening depression of an inch in depth. I superior edge slightly convex, and the whole structure is clearly melongation of the septum of the nose, the nostrils opening each side of by oblong fissure. This runs into the hood or sac-like appendage of the head. This hood strongly muscular, with an aggregation of circular fibres round its external orifices, which are two, the lower anterior part of the head. These probably served the purpose of sphincters, so perfectly to close the sac. The length of the upper jaw beyond this crest chiefly attributable to the intermaxillary bones, which are long and broad."

The following their interesting account of the eye:—"The eye is very peculiar, perfectly spherical, with the many entering directly in the axis of the ball. The selerotic or external covering is divided its middle entirely round; its two edges being connected by an elastic membrane thickly covered by muscles. The posterior half is subdivided into four longitudinal segments, extending from its edge within a quarter of an inch of the entrance of

the optive nerve. This structure, by elongating the axis of vision, may enable the animal more clearly to discern distant objects, and also, by the reverse, to draw the eye deep within the socket during repose, especially as there are no moveable eye-lids, but only the membrana nicttans; the lens is spherical; the iris is broad, and evidently acular."

For the reason already assigned, we supply little information from Dr Dekay himself. Respecting the teeth, he remarks a occasion. "that they almost exactly correspond with those of the Mitred Seal;" and he says again, "the jaw teeth are more closely approximated, the furrows in them deeper, and the last two are doubly furrowed." -"The dilatable sac," he remarks, "which its head, and which, when swollen up, appears like bladders. covered with short brown hair. The opinion of the fishermen regarding this appendage is, that it a sort of reservoir for air, which the animal when under water. Its great bulk, however, when distended, would prevent the animal from descending freely, or moving with facility beneath the surface of the water. The connection of the nostrils with the hood, the configuration of this part, and its internal structure, indicate its importas subsidiary to the of smell. The weak arms of offence and defence allotted to this animal render it necessary that this faculty should be exercised in the greatest possible degree. The hair of its hide is soft and long, and woolly underneath, dark in the old, and grey in the young, covered with irregular brown spots."

Of the habitat of the Cristata, it is stated by Fabricius that it is found only on the southern parts of Greenland, and that it delights in the high seas; visiting the land chiefly in April, May, and June. According to Crantz, they are found mostly on great ice islands, where they sleep in unguarded manner. They are found in great numbers in Davis' Straits, where they regularly make two voyages year, and remain from the month of September to the month of March. They then depart to bring forth their young, and return with them in the month of June, when they are very lean and exhausted. They set off a second time in July, and proceed to the north, where they probably find plenty of nourishment, as they return in excellent condition in September. They also frequent the northshores of America.*

Regarding its habits and dispositions, Fabricius says, "It is polygamous, and has its young usually the ice. It bites hard, and barks and whines like a dog: it grows fierce on being wounded; but will weep on being surprised by the hunter, shedding abundantly. They fight furiously among themselves, inflicting deep wounds with their claws and teeth."

Sir Charles Giesecké remarks that this animal grows the length of ten or twelve feet; which

[&]quot; In the history of voyages, according to Desmarest.

statement is repeated by Mr Scoresby; who adds, "It often returns the attacks of its assailants, and, being defended by its hood from the stunning effect of a blow upon the nose, sometimes inflicts severe wounds in the person by whom he is attacked;" a characteristic this which we have heard feelingly descanted upon by some who have been engaged in its capture in the Greenland seas.

In an economic point of view, we believe that this is an of the species which is most extensively made object of pursuit, both in the Greenland seas and in Davis' Straits; and that, together with the Rough Seal, it is brought in by much the greatest numbers to this country. The natives of the regions it habitually frequents greatly esteem it. The skins of the young are converted into the most elegant dresses for the women, and therefore highly valued; their great boats overed with the skins of the aged, also their houses the teeth subset to head their hunting spears, and the stomachs converted into fishing buoys.

We conclude this account of the Cristata in the words of M. de Blainville:—"We cannot readily conceive how any one could confound the projecting vesicular tubercle of which Fabricius speaks, with that modification of skin into which an animal bury its head in a monk's hood, and which we should naturally suppose would be found in the back of the head."

[·] Aretic Regions, vol. i, p. 511.

THE MITRED OR HOODED SEAL.

Phoen Mitrata.—CAMPER.

PLATE XV.

Phoca Mitrata, Camp. De The Capachia Seal, Cuv.

The designation of Mitred Seal appears to have been first applied by Camper, and cranium with this label found in museum, in 1811, by Cuvier. This specimen supposed to have been procured the Northern Ocean. Soon after making this observation, Cuvier received from III Milbert of New York a young animal of this genus, from which a skeleton prepared, and which perfectly to correspond with Camper's specimen. The locality of its capture was not indicated. It has probably been from these terials that the plate in the Pl. de Dict. des Scien. Nat., of which ours a copy, has been prepared, though this is not expressly stated. The learned author of the work here referred to has certainly been unfortunate in making this animal identical with the Created Scal.

This specimen only three and a half feet

long when it reached France, and, removing it from the liquor in which is been transported, appeared whitish, except on the back and legs, where it was of a slate brown hue, with a whitish reflection produced by the points of the hairs, their base being brown, well the wool which their roots. After it and dry, its native oil gave a decided yellow tinge. Its nails are large and whitish I the ends; its whiskers fine, short, and simple. The esteology of the cranium is very different from that of the Common Seal, may be by comparing the wood-cuts on pages 128 and 196. Cuvier adds, "Upon the cranium and neck of this animal there is a very singular structure, which may explain what has been said concerning a kind of hood which it erects and swells up at pleasure. This structure is composed of numerous vessels, forming tolerably thick net-work, which may contain a great quantity of blood, and which the region of the neck, and all over the shoulders, to appear we swollen than in most Seals. This structure minutely referred to by De Blainville in these words-- and sent to the Jardin der Plantes the skin of a Seal to which the head attached, and which presented a singular peculiarity. Close to the occiput and the attachment of the neck, the skin was separated from the adjacent flesh by a considerable mass of vessels, or, in other words, by a sort of erectile tissue; an appearwhich leads to think that the skin in this region susceptible of reflection, and, consequently, of covering the head was less, m far perhaps in the eyes, as a said of the Capuchin Seal."

The dimensions, the habits, and even the locality of this singular species, seem to be nearly unknown; the only gleanings we have detected being the following.—"One species," says Crantz, "has a thick folded skin upon its forehead, which it and draw down armits eyes, like a cap, to defend them against the storms, waves, stones, and sand; it has a short, thick, black wool under its white hair, which gives it beautiful grey colour." Again, "In that subgenus," says Mr Swainson, "named Mirounga by Mr Grey, tone species has the power of bringing forward fold of skin, placed the forehead in such way as to cover the eyes when the animal is threatened." And, once more, in the words of Lesson, "The Fur Seal of Patagonia has a bump behind its head."

^{*} Journal de Physique, t. zci. p. 289.

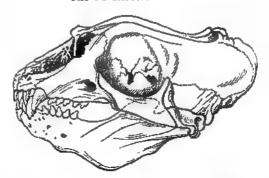
[†] Hist, of Greenland, vol. i. 125.

^{*} Are not sub-genera sometimes made too precipitately? Mionroung is a name given by the aborigines of N. Holland to the Proboscis Saal; and, accordingly, it is made a synonym of that animal by Desmarest, and, we believe, Peron. "The fold of the skin as the forehead, so as to cover the eyes," however applicable to the Micrata, man never, with any propriety, he applied to the Mionroung of Desmarest; and why interfere with his nomenclature?

⁹ Classif. W Quadr. p. 118.

I Diet. Class. d'Hiet. Nat. t. zi. p. 33.

GENUS MACRORHINUS.



THE cranium of the Genus Macrorhium differs very much from that of other Seals, m do also the teeth, whose formulary is $\frac{2.1.5}{1.5} = 30$.

The incisors we hooked like the canine, but wouch smaller; the canine are very strong tasks, and the molars have simple fangs, and present this singular appearance that their crowns maller than their roots; they appear like a nipple on the round hase which supports them.

de Blainville has given an interesting account of this cranium, from which we make a few extracts. "It is a foot and a half long, and the largest we have examined. The sagittooscipital creet is raised into a sort of pyramid like that of the
Rhinoceros. But that in which it differs from all others is its
exhibiting a structure capable of sustaining a prolongation from
the nostrile. In truth, the forehead is extremely prominent,
somewhat like that of the Elephant, and probably for an analogous purpose. The masal bones are very short, and those of the
muscle and longer than in any other kind of Seal, since they form
from their anterior extremity to the border of the orbit sum than
two-fiths of the total length of the head; and this muzzle is
nearly formed entirely of the maxillaries: the space between
these bones is entirely hollow, which leaves an enormous natal
opening.*

THE PROBOSCIS SEAL, OR ELEPHANT SEAL

Ph. Proboscides, Panov.

PLATE XVI. THE MALE.

Phosa Proboseidea, Peron, Des. Ph. Elephantina, Molina, Elephant Seal of the English. Phoque à trompe of the French. Macrorhinus Proboseidius, F. Cuv. Miouroung of native Australians.*

This animal has received its specific from the able Naturalist of the Voyage Terres Australes, account of the very peculiar appearance of its short trunk. It is not, however, from this point of resemblance alone that it has acquired the of Sea-Elephant, but also because it is by much the lavgest of its kind, in this respect more than doubling the dimensions of its terrestrial namesake, reaching the length of twenty-five and thirty feet, maintaining withal a proportionate thickness. From being an object of great commercial importance it has attracted much attention, and

[&]quot; This is also the Sea-Lion of Anson, and the Sea-Wolf of Pernetty.

we rejoice it has received minute examination from least Naturalist. Accordingly, shall take description chiefly from the interesting account of Peron.

The Proposcis Seal undoubtedly the head of all the Phocidse, me the largest and most remarkable of those kitherto known. I has the dimensions of twenty, twenty-five, and thirty feet in length, with a circumference of from fifteen to eighteen feet. Its colour is times greyish, sometimes bluish-grey, and more rarely blackish-brown. The absence of every thing like external ears; great whiskers composed of strong hairs, very long, and twisted what like screw, with other similar hairs over each eye, supplying the place of eye-brows; eyes which are extremely large and prominent; strong and powerful swimming paws, having their margin five small black nails; a very short tail, which is almost hid between two flat horizontal fins : these form the distinguishing traits of this strange animal. But the singular prolongation of the nostrils still remains to be mentioned. When the animal is in state of repose, its nostrils, shrunk and pendant, only to make the face appear larger; but whenever be rouses himself, when he respires violently, when about to attack, or wishing to defend himself, the proboscis becomes elongated in the form of a tube to the length of about a foot; and then only is the countenance changed.

may be mean in the drawings, but the character of the voice is modified in most less striking manner. The females mean destitute of this organization, and have the upper lip even somewhat cleft. In both sexes the hair is exceedingly means and close, and hence cannot be compared in value with the finer skins of many other Seals.

THE FEMALE.

PLATE XVIL

THE following particulars have kindly been communicated to us by Dr Trail:—"The Great Seal Liverpool was brought from New South Shetland about ten years ago. They abound on the coasts. The sailors find the male usually surrounded with several females; and they avoid wounding him, as the females seldom abandon the male, though they was the butchery of their own sex, but will leave the shore with the flight of the male.

The males pugnacious with each other for their females. The one in the Liverpool Museum is not reckoned above the usual size of a full grown female."

To the account of the external appearance by Peron, are happy we can the following valuable description, by our intelligent publisher, of the female of this species, preserved in the Liverpool Museum, and which put up under the able direction of Dr Trail :- " I have taken." says Mr Lizars, "a sketch of this Great Seal, and a wonderful monster it is :- compared with any ordinary Seal three or four feet long, it appears exactly like Elephant when compared to sheep. The animal is laid out at full stretch, and measures from the point of the nose to the end of the hind flippers fifteen and a half feet; but when the bones were in situ it must have been longer, I should say fully sixteen and a half feet. Its greatest circumference, taken behind the fore paws, is ten feet three inches; but this also must be far short of what it was in the living state, m that I should say it must have amounted to twelve feet. If you make across between the tips of the paws, it appears the animal is nearly broad as it is long, in the human frame. The whole surface, excepting the nose, is entirely covered with very short hair, dark olive brown above, and shading away to a yellowish bay colour below upon the belly; upon the under part of the cheeks and chiu the colour approaches to full dark-brown, and rather longer than elsewhere. The hair lies in patches, in all directions, which gives spotted appearance to the whole body, making it somewhat like watered silk, but the colour of the individual hairs is the some olive brown and yellowish bay.

"The head is large for Seal, and well marked, much like our Sea-Liou in the College Museum, (No. 19,) but without the beard and The not in the smallest degree prehensile, not more than that of a Labrador dog, to which the head also has resemblance, I the smooth skinned Newfoundland dog, which is not very There are four fingers and a sort of thumb on the fore flippers, with perfect nails upon



each; the hind toes have not the rudiments of nails, but are beautifully constructed, like the web of duck's foot, and formed expand, so increasing the power of natation. Its tail very short, not more in six inches long. The orifice of the

■ well defined, although very small, not sufficient
■ allow the little finger to enter, and the hairs are so
arranged as to turn inwards. The teeth ■ arranged,
and shaped as below. Between the canines, in



the upper jaw, me four incisors, control, and of very different sizes; there me also four grinders, (probably five is the normal number,) of the form, size, and at the relative distances, here represented.

The grinders of the lower jaw are precisely similar, five on each side; and there are only two very small incisors between the canines. The points of the canines are much worn. You will probably be of opinion that from the construction of the mouth the animal must swallow wictims without mastication, and that with single bite with such canines will dispatch the same once."

Frequenting only the Southern hemisphere, this has a peculiar delight in its most desert islands; and what is strange, for of these in preference, and to the exclusion of others. Thus, in a particular group, consisting it may be of several dozens, it be seen only on two or three. It and found on the vast continent of New Holland, nor in Van Diemen's Land, except m driven m shore by tempests. It has been found in berds in Kerquelen's Land, upon S. Georgia, the States Islands, where it is regularly fished, also upon Juan Fernandez, South Shetland, and the Falkland Islands, where, however, there but few. The only explanation of these preferences which we can suggest is, that they may perhaps depend me the presence of those fresh water lakes, or rather swampe, in which they delight to wallow. As the result of all the observations hitherto made, it may be remarked, that these powerful animals are confined between the 35° and 55° of S. latitude, and that they exist both in the Atlantic and Southern Oceans.

The Elephant Scal is not, however, a fixed tenant of favourite haunts; for, avoiding the favourite haunts; for, avoiding the favourite haunts if the favourite heat and cold, in the commencement of winter leaves the South, and approaches temperate regions, and the favourity heats it again retires towards the pole. It month after this voyage the females begin to bring their young; when they are usually all assembled the shore, and are surrounded by the males, who do not allow them

to return to Nor do they revisit that element till the period of lactation is over; and it has been stated that, if at any time the mothers appear to be separating themselves from their young, the males pursue, and by biting, force them to remain in their post. According to Peron, they have only one a birth, very rarely two, whilst Anson states they have generally two. The young at birth and between four and five feet long, and weigh seventy pounds, and then the male is larger than the female. In suckling | the mother reclines upon her side. The period of lactation continues seven or eight weeks, during which period no member of the family either eats to sea. The growth of the young is very rapid: in the first eight days it doubles its dimensions, and increases to than twice its original weight. This rapid development is of ____ the expense of the mother, and mushe does not make up her loss with any kind of food, she manifestly wastes away from day to day, and has sometimes been observed to sink under it, though it is difficult to determine whether this fatal result arises only from the great drain, or from some fatal disorder. The first teeth appear at the end of a fortnight, and in four months they all present. The growth of this species rapid, that the end of the third year the young animals have attained the length of from eighteen to twenty-five feet, which is the ordinary limit of their growth, after this they increase principally in fatness.

When the young are six or weeks old they conducted to the the shores being abandoned for a time. The whole troop in cert: at this time they all swim sufficiently gently, and though they often disappear under water, yet they forced short intervals to rise to the surface for the purpose of respiration. When the young wander away from the herd, they immediately pursued by some of the older ones, who, by biting and otherwise, oblige them to return to the group.

After remaining three weeks or more to familiarize the young with this element, and to recruit their exhausted strength, the Sea Elephants return second time to the coasts, for the all important object of reproduction. It has been already stated, that at the age of three years these animals have acquired all their growth; and it is then also that the remarkable proboscis of the male is developed. Previous to this event he consorted with the females; and this appendage may therefore be regarded as index of virility.

During season of their amours, the harmony of the community disappears, and is unknown during this time of inebriation. Animated by common passion, the males give themselves to bloody contest; they fight with the greatest fury, but always in single combat; and, as Steller remarks of a congener, two assail the others haste the help of the oppressed individual, indignant the foul play. Their mode of the is very singular.

The two rival giant knights waddle heavily along: they meet, and join smout to snout | they then raise the anterior portion of their body as far at their fore-paws, and open their immense mouths; their eyes are inflamed with rage, and they dash against each other with the greatest momentum in their power; they tumble one over the other, teeth crash with teeth, and jaws with jaws; they wound each other deeply, sometimes knocking each other's eyes, and frequently their tusks; the blood flows abundantly; but these raging foes, without seeming to observe it, prosecute the combat in their strength completely exhausted. It seldom that either left dead on the field, and the wounds they inflict, however deep, heal with inconceivable rapidity. During these violent combats, the females, with apparent indifference, wait the issue for the lord who to rule them. He, on the moment of his victory, proud of his success, hastes into the midst of the timid group, and reigns with undisputed empire. The period of gestation appears to be nine or ten months.

In the meanwhile, as the sun approaches the antarctic circle, and the heat proves too much for
them, the young having heen brought forth during the smiles of spring, and having become
familiar with their natural element, the whole
tribe for the South, there remain till the
threatenings of frost induce them to return to
genial skies. It may be added, however, that

few, probably retained by weakness, always main in the milder climate.

of the Seals, as make seen, prefer rocks and ice-islands for their supramarine habitation; but the proboscidize, on the contrary, confine themselves to the sandy flats of the shore; they seek also for the neighbourhood of fresh water, in which, though it be not altogether essential to them, they delight to plunge, and appear to drink with pleasure. They sleep alike when extended on the sand, and when floating upon the surface of the waves. When assembled in great troops on land, and reposing, one or more of their number is constantly on the watch: When danger threatens, they immediately give the alarm, and then all hasten to the beach, to precipitate themselves into the protecting wave. Nothing is singular than their gait. It is a kind of crawling, in which their body appears to tremble, like menormous bladder full of jelly, so very thick is the coat of lard which covers them. And not only is their gait slow, and apparently painful, but every fifteen on twenty paces they me forced to halt, partly from fatigue, overwhelmed with their own weight. If, during their flight, any one gets before them, they instantly stop; and if, by repeated blows, they me forced to move, they appear to suffer mucn. It is remarkable, that in these circumstances pupil, which usually of a bluish-green colour, becomes of a deep blood-red hue. Notwithstanding all this difficulty

of progression, the Sea-Elephants, in King's Island, succeeded in ascending the low downs, of some fifteen twenty feet elevation, where small ponds of water existed.

The cry of the fentale and the young male resembles the lowing of mox; but, in the adult males, the proboscis gives such mo inflexion to their voice, that it is something like that kind of noise which may be produced by gurgling. This hoarse and singular cry is heard at a great distance, and is wild and frightful; and in these dreary regions during the stormy nights which sometimes occur, on being suddenly roused from slumber by the confused bellowings of these colossal animals, congregated near your bivouac, you can scarcely resist being seized with a momentary panic.

We have already noticed that these animals avoid great heat; and, unlike most of the race, they appear to be greatly incommoded by the direct rays of the sun. Hence, when lying during the day in the beach, they im noticed to take particular delight in covering themselves with great quantities of sand, moistened by the impostance, which they throw them with their paws they impost entirely enveloped in it. It is under these circumstances especially, that, with Forster, we might mistake them for impany rocks.

Sea-Elephants are of extremely mild and docile disposition, so that one may pace about among them without fear. They never think of attacking unless they are provoked by the rudest violence. And it not only on shore they present gentle character; for the fishers affirm, that when of smaller species come and swim amidst them, they me offer them the least injury. may, even without risk, bathe in the midst of herd of them, and the fishers in the habit of doing They also capable of forming a real attachment, and of very considerable education. On occasion, m English sailor selected voung as a pet, and treated it kindly for a few months. At the end of this period he had me completely tamed it, that it came at his call, allowed him to mount upon its back, and put his hands into its mouth. In word, this gentle creature did all that in its power for protector, and bore every thing from him without offence. It made have been on facts such as these that Penrose expected credence for the statement, "that his rode on these animals they would do on horses, and when they did not swim sufficiently rapidly, forced them to quicken their progress by the spur."

Though nothing is definitely known as to the natural term of life of these Seals, yet some, who familiar with them, have estimated it twenty-five thirty years. In has been remarked, that when about to die, feeling themselves indisposed, they leave the ocean, and advance further in shore than usual, where they lie down among brushwood, and wait death, as if they wished to reaign in the situation they first received it. Sometimes they with fatal accidents. Surprised by tempests,

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they are precipitated against the rocks, and, in spite of every effort, and dashed to pieces. They encounter also other dangers in the depths of the The fishers state that they sometimes unexpectedly them ascend from beneath the wave in the greatest apparent alarm, many of them being covered with wounds, and dyeing the water with their blood. Their panic concurs with their wounds, in proving they have been hunted by some formidable foes. But what are these? The fishers unanimously agree that they know no animal that could make such large and deep wounds; they therefore presume that these contests must be carried on with some known monsters dwelling far from the coasts | whilst they in the same time allow they have there otherwise been able to detect any trace of them. They add, that it is doubtless to preserve their young from these attacks that the Sca-Elephants prevent them, with such assiduity, from diving too deeply. wandering too far from the flock, as formerly noticed.

But the promidable of all their enemies is encountered upon land, and this enemy is well we have already stated, that they are sometimes forced ashore in New and Van Diemen's Land. The moment that the native savages perceive one they surround it, while it in vain attempts to regain the last the retreat thus cut off, armed with long pieces of wood burning one end, the savages attack the unfortunate brute. As now as he opens his mouth, showing the only weapons with

which he armed, they at once force many of these flaming torches down his throat. The unfortunate Elephant gives utterance to the most ancholy bellowings, whole frame is agitated with violence, and he dies of suffocation and agony. Joyful shoutings ascend on every side, and the cruel conquerors set themselves down to devour their prey. Each tears away what he can he gorges himself and sleeps; he awakes, and eats, and sleeps again. The feast may have united tribes which were inimical, and for the time their hatred is extinguished; but their revels over, their animosities revive, and murderous combats usually terminate their disgusting orgics.

But these savages are not their most formidable foes: their voracity they can generally avoid; but they find mescape from mercantile cupidity, which appears to have vowed complete extinction to the ____ The fishers use in destroying them a lance twelve or fifteen feet long, with a sharp iron point of about two feet. With great address, they seize the moment when the animal raises his left fore-paw to advance, and plunging the weapon to the heart, he immediately down drenched in blood. The females rarely offer the least opposition, their defensive weapons being feebler still than those of the male. When attacked, they seek to flee; if prevented they become violently agitated, their countenance assumes the expression of despair, and they weep piteously. "I have myself," says Peron, " seen wyoung female shed

abundantly, whilst one of wicked and cruel sailors amused himself at the sight, knocking out her teeth with moar, whenever she opened her mouth. The poor animal might have softened heart of stone; its mouth streaming with blood, and its eyes with tears." To this quiet submission there a few anne exceptions, as when a mother is interested about her offspring. Thus, it is recorded in Anson's Voyage, "One day a sailor being carelessly, and, and add, cruelly, employed in skinning a young Sea-Elephant in its mother's presence, she upon him unperceived, and getting his head into her mouth, scored his skull in notches in many places, and thereby wounded him desperately, that, though all possible taken of him, yet he died in a few days."*

It is not on account of its flesh that this animal is mearnestly pursued: this is not only black, oily, and indigestible, but it is also impossible almost to separate it from the lard. The tongues alone supply really good aliment; and they are salted with care, and esteemed in the market. The heart is sometimes eaten, but it is hard and indigestible; and with regard to the liver, which is esteemed in means Scals, it would appear, after repeated trials, to be hurtful. The skin of the Scal is considered valuable, though not esteemed for its fur, its thickness and strength recommend much, and hence it is extensively employed for carriages and horse har-

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ness. I the oil, however, which chiefly prized by the fishers, and the immediate object of their enterprising expeditions; meed wonder when think either on the quantity, the quality, the facility with which it is prepared. In fact. the Sea-Elephant does not yield - of the cete in the thickness of its blubber, which is often more than a foot, and supplies a prodigious quantity, amounting to 1400 or pounds in the largest individuals. Its preparation is very similar to that of the whale oil, except that it is always carried upon land. All agree that its quality is most excellent. It is limpid, inodorous, and never becomes rancid; in cooking, it imparts no disagreeable your; and in burning, it produces me smoke nor smell, and is slow of combustion. In England, it is used for the softening of wool and the manufacture of cloth; and it is also much used in China.

.....

This fishing has been prosecuted in many quarters: King's and New-Year's Island mem in full activity at the commencement of this century a third station existed Kerquelen's Land, a fourth in the Sandwich Islands, whilst others mem forming in the States' Islands and elsewhere. Thus, this gigantic species was attacked in many points at once; its numbers have been thinned with the greatest possible rapidity, and mention and is to be dreaded.

It interesting sketch of the Zoologist of Le Geographie is a carefully successfully drawn, that we have been studious not to interrupt the

parrative. Our limits forbid was offering any reflections | man can are do more than barely refer to interesting notices respecting this Seal which may be found in Anson's Voyages. Pernetty's observations are so curious that we cannot wholly omit them. "When you penetrate," he observes, "the thickets of brushwood to which they retire, and in which they form their lairs, you is them almost always asleep upon the dry leaves. At first I had no adequate conception of their prodigious size. When at the distance of about a thousand yards they looked like little mountains, and it was only on coming close that I formed a correct idea of them. After minutely examining one, M. de Simon led me to the bank of m brook overgrown with reeds and rushes. On entering, he immediately shot one about the size of a stout calf. Sounds instantly assailed = all sides, like the grunting of hogs, the bellowing of bulls, the roaring of lions, and the deepest notes of a great organ. We were mastounded that we hesitated to proceed; but being satisfied that all the cries issued from these warm animals, and that they might be approached without risk, provided you did not go too near, me penetrated among the reeds. About thirty appeared, lying about, sometimes two or three in the same trough. M. St Simon shot eleven of them. Those which were not wounded remained quietly in their lairs, without exhibiting either fear or fury. The smallest we killed were between fifteen and sixteen feet in

length. On another occasion, when some of these animals were approached, two of we young people amused themselves by throwing large pebbles into their gaping mouths, which they swallowed as we would have done strawberries. They move with great difficulty, though their head and neck have ready play. It would not be safe to go close to their lair, they might cut a min in two at single bite. Their eyes are the most beautiful in the world, and their aspect is not at all ferocious. The colour of some of them is white, others are dun-coloured, but most are of the min hues the beaver; a few were like the light hind."

We shall close our of these gigantic amphibia by few sentences from Weddell. The inactivity and extreme lethargy of those Seals when on shore is astonishingly contrasted with their sagacity and agility when at sea. They have been known to keep a boat from landing, by intercepting it in the water, when the crew had no fire-arms; and frequently when we is pricked with a lance, it will attack the boat with the greatest ferocity. It is curious to remark that the Sea-Elephant, when lying on the shore, and threatened with death, will often make no effort to escape into the water, but will lie and shed tears, merely raising its head and looking at its assailant. In close contest every

More ample details will be found in Voy. aux Mullous, t. ii. p. 40.

human effort would be of little avail for its destruction, unwieldy though it be, were it to rush forward and exert the power of its jaws: for this indeed is menormous, that, in the agony of death, stones me ground by them powder.

THE OTARIES.

We proceed to the second great division of the Phocidia, the Otaries; and in addition what has been said on p. 98, we may now add, that their forepaws, as if intended exclusively for swimming, are generally placed farther in the body than in the true Phoca, giving them appearance of possessing a longer neck; the fingers also are more hid in the skin, and they have no nails; the hind feet have the membrane or web prolonged beyond the nails into five long straps or ribbons, (see p. 55,) and the under surface of the foot, and are deeply marked with rugge.

We turn first to the animals which have received the popular of Sea-Lton, which has been applied by voyagers Seals of large dimensions for a variety of fanciful and about Thus Funnell, in his narrative of that voyage which goes under the seals of Dampier's, applies the ap-

pellation to a great Seal he encountered, because "he roared like m lion;" and others have conferred it upon other animals, because they had teeth like lion's teeth, and forth. Steller, who, in 1742, first gave a detailed account of some of these larger Seals, described under the name of Dampier's Sea-Lion; but in looking to Funnell's account, it is evident that no could thereby distinguish the species; and from other considerations, is almost certain it had reference to the Proboscis Seal just described, (p. 208,) which, have seen, was called Sea-Lion by Anson, and Sea-Wolf by Pernetty. But this is the least of our present confusion. Pernetty gives a account of a Sea-Lion which he encountered at the Falkland Islands; and Forster, in his account of Cook's Voyage, supplies another of a somewhat similar animal which they met with Staten's Land. From the general resemblance merely, Pernetty regarded the great lion of the Falkland Islands = identical with Steller's: = the time remarking there were several species of Sea-Lion; and Forster disposed to identify the species he was both with Steller's and Pernetty's; whilst Peron and other naturalists, who have paid great attention to these amphibia, strongly contend that there are three or more different kinds. Analogy would certainly lead us to conclude that the Seals of such different regions and themselves different, and without entering further into discussion upon

Loc. c. p. 38.

this point present, we merely state that think best to follow the example of Peron, and of the Dict. Classique, and to treat of these species rally. We shall resort, much possible, to the original of information, and shall thus, in a great degree, put our readers in a condition to form their own judgment.

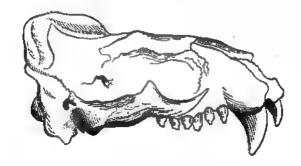
GENUS PLATYRHINCUS.

We have now arrived the sixth genus of M. F. Cuvier, concerning the osteology of which he confesses that nothing satisfactory is known. He had before him a cranium, which, by the bye, he does indicate, which and different from the others, and which was labelled as a Sea-Lion's; and without attempting to refer it to any apecies, he establishes upon it the present genus. This, of course, only groping in the dark, though it was the stime making progress, so far as unequivocally to indicate another kind of Seal. Since that time, other not less extraordinary crania have been discovered, and of some of these we shall avail me selves, at the seal time begging attention to the

fact, that these several specimens have not been mitisfactorily referred to any distinct species, or, it may be, genera.

In connection with the Sea-Lion of Steller, we venture to prefix a copy which De Blainville took of a cranium in the London College of Surgeons, and which and labelled, "Sea-Lion from the Island of Tinian—from Commodore, Byron." This island, one of the Ladrones, in lat. 15° N., borders on the N. Pacific Ocean, though still at a great distance from Behring's Island and the Kuriles, which were the summer residence of Steller's Lion; from which, however, they went southwards on the approach of winter.

The following is an abridgment of Blainville's account of the cranium, which wanted the lower jaw. It is more than a foot long, and apparently belonged in an adult animal; its crests are remarkably strong, indicating the attachment of powerful muscles; the forehead and chapfrin are almost horizontal; the opening for the nostrils is also horizontal, and of middling sine; the muzzle about one-third of the length of the whole head; the urbit also is forward, to that the molars are carried for back. The teeth am (3.4.6.;) six incisors in a straight line, the external much the largest, and like canines; the canines and of great size; and then, without any interval, six molars, almost equal in length, and augmenting in thickness from the ones to the third; they appear to have been | nearly pointed and conical. M. F. Cavier indicates Steller's Lion m the type of this graps. and the above description Steller's very minute count of the teeth.



SEA-LION OF STELLER.

Phoca Juhata Garre.

Otaria Stelleri, Less. Phom Juhain, Gmd. Desm. Plat. Leoninus, P. Cuv. Dumpiere Leo Marinus, Steller. Sea-Lion III Steller.

According to Steller, the length of the full-grown Sea-Lion of the North is about fifteen feet, and its weight about sixteen hundred weight. The males have stiffand crisp curled hair about the neck, of which the females and young are destitute. The females are shorter and more elender than the males. The hide is very thick, and covered with coarse strong hair of a reddish colour like that of many cows, which gets paler in the aged, and is of a deeper hue in the young; in the females it has mu bright ochre tint, and

^{*} Nov. Comment. Acad. Illiani Petroppl. II il. III annual 1749.

is sometimes of a chesnut colour in the young. The head is large; the same stretched out, and somewhat turned upwards; the eyes are very large, baving the inner angle stained, as it were, with cinnabar from the size of the caruncle; the bright pupil sparkles of green colour, and the rest of the eye is white like ivory; the eye-brows are bushy; the external ears conical, upright, large, and distinct. That which especially, in addition to the colour and size of the animal, entitles it to the most of Sea-Lion, is its of and undulating hair, which augments its apparent size, and greatly increases its beauty of form, like that which is seen in the king of beasts. the upper jaw there are six incisors; four of these have double or twin summits, or bifurcated; then succeeds one, canine-shaped on each side, more than an inch long, very sharp, and curved inwards; then there are the true canines, twice as long as the last, and very sharp; then six molars, shaped like canines. with a small heal before and behind; they malmost two-thirds of an inch long. The formulary is $\frac{5.1.6}{8.1.5}$ =36. The shape is exhibited as p. 236.

This Sea-Lion inhabits the eastern shores of Kamskatka and the Kurile Islands, and far Matsmai, where Captain Spunberg observed certain island of the most picturesque form, bordered with rocks resembling buildings, and swarming with these creatures, to which he gave the false of the Palace of Sea-Lions. They abound in Behring's Island in the autumn, whither they resort for the bringing forth of their young. Steller also

them in abundance in the coasts of America in July. They are not in inigratory as in other species, but still have their summer and winter quarters. They live chiefly in rocky shores, and desert rocks of the ocean, in which they climb, and their roaring is said to be useful in the foggy weather of those regions, by warning navigators to avoid destruction.

Though the males have a terrible aspect, yet they take flight on the first appearance of man; and if surprised in their sleep, they are panic-struck, sighing deeply, and in their attempt to escape, get quite confused, tumble down, and tremble so much, that they are scarcely able to meet their limbs. If, however, reduced to extremity, they grow desperate, turn their enemy with great fury and noise, and put even the most valiant to flight. On this account the Kamskatkans never attack them in the open sea, nor without many precautions on land. They usually watch their opportunity to find one asleep, when the courageous amongst them strikes their harpoon into the creature, and takes to his heels on fast as he can: his comrades then fasten the line attached to the harpoon to a strong stake, and its flight thus arrested, they shoot at it with arrows, and dart their lances, until being nearly overcome, they venture in and despatch it with their clubs. They often also employ poisoned arrows with effect. ■ ■ the same time true that many of the natives of those regions, from the great size and power of these animals, attach a kind of glory to the destruction of a Sea-Lion, and that some of them will hunt it, great peril to themselves, for many successive days, by me and land, without any other compass than the stary heaven.

Though these animals are naturally savage and brutal, yet in the long-run they become familiar with man. Thus Steller tells us that he lived for six days in a bovel in the very midst of them, and they soon became intimate. . They observed what he was doing with great calmness, laid themselves down close beside him, and would suffer him to seize their cubs. He had thus an excellent opportunity of studying their habits, and once one which had been robbed of its mate fight with the whole herd for three days, and escape last with than a hundred wounds. They allowed the whelps of other Seals to sport near them without offering them the least injury. The old showed but little affection for their young ones, and sometimes, through ____ carelessness, would tread them to death; they also suffered them to be killed before their eyes without any concern or resentment. The cubs, too, on land are not sportive like those of some other species, but almost always asleep. They are taken to when somewhat advanced: when wearied they mount - their mother's back, whence the male often pushes them to accustom them to the exercise. The males treat the females with great respect, and often them. They are polygamous, but usually satisfy themselves with from two to four females a piece. The older man bellow like bulls, the younger bleat like sheep.

Their food M fish, the lesser Seals, Sea-Ottars, and other marine animals. During the heat of the old males almost entirely abstain from food; they indulge in indolence and sleep, and become excessively emaciated.



THE SEA-LION OF FORSTER.

PLATE XVIII,

Leo Marinus, Buff. Otaris Leo Murinus, Fersteril, Letton. O. Jubats, Dre. The Sea-Lion of Forster.

Mr. Forster is the principal, if not the only, original authority among naturalists, for this great Lion Seal of the southern hemisphere. He met it when accompanying Captain Cook in his second voyage, and gave an interesting description of it in his narrative of that expedition.* Forster, or rather perhaps his father, transmitted about the minute to Count Buffon a detailed account of this animal, together with drawings taken from nature, both of which minused in the supplement of his Histoire Naturelle, where, however, this document is unfortunately mixed up with Steller's account just given. We here therefore reject what has been copied from Steller, and give only what appears to have been drawn from Forster's communication.

Voyage, &c., by G. Forster, 4to, Lond. 1777, vol. ii. 512.

After describing the coat and must very much as Steller had done, Buffon proceeds-" It has me fur me short woolly hair under the longer hair, as is found in the Sea-Bears. The weight of the full-grown male is about sixteen cwt., and its length between ten and twelve feet; the females are much more slender and shorter, usually about seven or eight feet long. They are every where equally thick, and look like great cylinders mann suitable for rolling than for walking. Moreover, this rounded body scarcely to be properly trimmed, because, being covered with an immense quantity of fat, it immediately assumes III the inequalities of the soil and rocks over which it _____ or rests while taking repose. The head appears too small in proportion ■ the body; the muzzle is ■ unlike that of a large mastiff, being somewhat elevated and truncated its extremity; the upper lip overhangs the lower, and both are supplied with long coarse black whiskers, which become white with age. cars conical, about six or seven lines long, the cartilage is firm and stiff, and yet they what curled at the margin; they are covered with hair externally, and are smooth and destitute of it internally. The eyes are large and prominent, the caruncles, which have a bright red colour, that the eyes appear inflamed; there is a nictitating membrane which covers all the eye at the will of the animal. The tongue is somewhat forked the extremity." The teeth me made exactly to correspond with Steller's description, that though

no reference is made it, can doubt it is copy.

The Sea-Lion has not much fore-paws as fins proceeding from the sides of the chest; they smooth, of a black colour, without any appearance of fingers, with mere trace of nails; they have the shape of roundish tubercles, and are of a horny consistency; they are situated m about one-third from the extremity of the paw, the whole form of which is that of me elongated triangle truncated at its point; it is quite devoid of hair, and deeply striped its under surface. The posterior extremities are not very unlike the anterior; they have the same black skin underneath, and clearly include five very long and flat toes, which are terminated by thin compressed membranes which extend beyond their extremities; the small nails, which are placed at the end of the proper fingers, are of no more important use than to enable the animal to scratch itself.

The illustrious Cook himself states, that the largest of these animals he with were not more than twelve or fourteen feet in length, and perhaps eight ten in circumference: the female is not half so long, and is covered with short hair of an ash colour. He adds—"It is not at all dangerous to go among them, for they either fled or lay still. The only danger was in going between them and the sea; for if they took fright any thing, they would come down in such numbers, that if you could not get out of their way, you would be so over. When we came suddenly upon them, or waked them out of

their sleep, (for they are sluggish, sleepy animals,) they would raise up their heads, snort and snarl, and look fierce, wif they meant to devour us; but as we advanced upon them they always ran away, so that they we downright bullies."*

Forster remarks, that the "rocks along the shore, in New-Year's Harbour, were covered with multitudes of these Seals, which, from their manes, well deserved the name of Sea-Lions. We put into little cove under the shelter of more rocks, and fired some of these fierce animals, most of which immediately threw themselves into the Some of the most unwieldy, however, kept their ground, and killed by bullets. The noise which all the animals of this kind made warious, and sometimes stunned The old males snort and like mad bulls lions; the females bleat exactly like calves, and the young cube like lambs. They live together in herds. The oldest and fattest males lie apart, each having chosen . large rock to which none of the rest dare approach without engaging in furious combat. We have often seen them seize each other with a degree of rage which is not to be described; and many of them had deep gashes - their backs, which they had received in the ____ The younger active Sea-Lions, with all the females and the cubs, lie together. They commonly waited the approach of people; but m soon as soon of the herd were

^{*} Kerr's Voyages, vol. = p. 16.

killed, the took flight with great precipitation, some females taking off a cub in their mouths, whilst many so terrified that they left them behind. When left themselves, they often seen caressing each other in the most tender manner, and their snouts often met together if they were kissing. They come on shore these uninhabited spots to breed, and do feed during their stay land, which sometimes lasts several weeks; they then grow lean, and swallow considerable quantity of stones to keep their stomach distended. We surprised to find the stomachs of many of them entirely empty, and those of others filled with ten or twelve round heavy stones, each the size of two fists."

Each of the great herds of these amphibia is composed of adult male, and a number of females and their young. The number of females would appear to vary. Cook, in his own account, says—" The male is surrounded by from twenty to thirty females, and he is very attentive to keep them all to himself, beating off every male who attempts to man into his flock. Others, again, had a less number, and no more than one or two; and here and there as have seen my lying growling in a retired place alone, and suffering neither males nor females to approach him. We judged that these were old and superannuated."* Forster reckons the number of females at ten or twelve, and from fifteen

[·] Cook's Second Voyage P. iii. B. ii. Ch iv.

to twenty young ones of both They swim about together at sea, and also remain united when they repose on land. According to Forster, the sight voice of man makes them flee, and throw themselves into the water; for, although they large and strong, they are also timid; and when attacks them even with good stick they rarely defend themselves, but retreat precipitately. They an attack, at the offensive, that person may be in the midst of them without any apprehension.

The females never fight with each other, nor with the males, and seem to live in entire dependence upon the chief of the family; but when two grown males, or rather two heads of families, gage, all the females attend in their train, to witness the contest; and if the chief of another troop interfere with the combatants, either on one side the other, his example is immediately followed by many other chiefs, and then the combat becomes almost general, and terminates only in a vast effusion of blood, and often many in the death of many of the males, whose females are instantly joined to the family of the victor. In has been remarked, that the very aged males do not interfere in these struggles; they seem aware of their weakness, and keep at a distance, remaining quiet in their favourite retrest. The lionesses endeavour to make their escape from the thick of the fight. Their maternal affection does not appear to be strong as in some of their congeners, although Forster stated in his private memoir Buffon, that be had sometimes were them defend their young the expense of their lives.*

We in this place introduce a representation of a cranium, which must be regarded in interesting by the student, which, according to Baron Cuvier, probably belonged to the Sea-Lion, and in will venture to add to the Sea-Lion which is next to occupy our attention.

It came Paris from the Museum of M. Faujas. "The cranial front," says Cavier, "is short when compared with the muszle, m is the whole head when compared with its height. The zygomatic arch is short and high, w II likewise the lower jaw, with an acute posterior angle, and the whole ought to give a more than usual rounded external form."?

Buffon's Hist. Nat. Suppl. t. vi. p. 368.

[#] Oss. Foss. v. 222.



THE SEA-LION OF PERNETTY.

PLATE XIX.

Omria Pernetti, Less. Platyr. Leonims. F. Cuv. O. Juhata, Des. 580. O. Leonina, Peron, Sea-Lion of Pernetty.

We come to the Sea-Lion of Pernetty, and if any credit is to be attached to the drawings of Forster, published by Buffon, we think there be little doubt that Forster's Lion is different animal from the present. Even before we had examined the valuable specimen, from which our representation is taken, we were disposed to regard Pernetty's Lion as distinct from the other. We draw this inference from Pernetty's own description and plate. This description will be immediately given; and we shall here only note that he expressly says—"Il y a plusieurs sortes des Lions marine," and this after setting apart the Sea-Elephant, and the Sea-Bear, which mext under review. With regard to

Lib. s. cit. ii. 28.

his figure, always thought that it argued more inattention and error than we usually find in the learned Benedict, to suppose that he would represent Forster's Lion by the figure he has supplied. It is true his figure has been subjected to much disparaging criticism, and yet would are to be the best likeness of the animal which has hitherto been produced. We may likewise refer, as of man importance, to the short notice of Lieutenant Clayton, who says that the Sea-Lion is most of four amphibious animals which occurs at the Falkland Islands, and "that both the lion and lioness bull-faced, with long shaggy hair." We have only to look to Forster's figure to be convinced that it has no title to this character.

It is, therefore, with considerable confidence that present the above drawing a correct representation of the animal described by Pernetty, which brought from the antarctic regions some years ago, and transmitted to the Royal Museum of Edinburgh by the Honourable the Admiralty Board. We believe this is the first time (with the exception of Pernetty's labours just alluded to) that this Sen-Lion has been depicted or described, and therefore shall here supply the external characters far they be obtained from specimen, which is truly a valuable one, and in excellent condition.

The head is very large and round, will truncated anteriorly; the neck also is very large, and well defined; the body too is robust, tapering to-

^{*} Phil. Trans. vol. lxvi. p. 102.

wards the tail; the neck covered round with distinct of coarse bristly hairs, between three and four inches long, of m brownish-black and grevish-white colour. The coat generally is of the colour; not, however, coarse, and very short and loose, lying close to the skin; on the under portion of the body ■ is of ■ deep brown colour. The face very much resembles that of the common Lion, the snout being shorter; the nostrils are very large; the muzzle is short and full, covered with short, soft, brownish-black hair; the quite distinct, though not long, and covered with The fore-paws are nearly me far back as the middle of the body; they are falciform, and very strong; they have no appearance of nails, but have a long projecting membrane beyond the phalanges: the posterior extremities are long and broad, with four claws attached; the outer toe has none; the three next toes have the longest, the remaining neil is almost concealed; they are conical; beyond the claws and five strong projecting membranes. The skin of the outer half of the inferior part of the fore-paw, and nearly whole of the inferior part of the hind-foot, is quite naked, and is deeply striped. The teeth are 3.1.5? The incisors are conical, though, being much worn, speak decidedly; the external large, and resemble canines; the proper canines are large, more than an inch and half long; the molers conical and truncated.

We add some of the principal

specimen.

Feet.	In.	
Langth, along the back, from tip of snout to tip of		
tall.,	10	ຸດ
of the tail	3	3
from tip of snout to anterior edge of fore-paw3	4	ı
from posterior edge of base of paw to root of tail	8	0
from ear is ear over the forehead	2	4
of fore-paws, from base to extremity1	9	Ð
of projecting membranes0	8	0
of higd-foot, from base to extremity	8	O
of projecting membrane, (much abrunk,)0	ß	а
of conchs of the our	0	R
Circumference of the neck, smallest part4	5	В
body before the fore-paws	0	0
at the root of the tail3	6	6
Distance of ear from angle of the month0	7	0
from tip of nose to the eye	3	6
If external angle of the eye to the ear0	3	10
of me external angle of me eye to the other0	6	0

The following is the account of Pernetty, as taken from the animals he met with in the Falkland Islands:—"The name of the Sea-Lion applies best to that species, the head, neck, and shoulders, of which are covered with hair molong, to least, to that of the she-goat. This circumstance gives the animal resemblance to the Lion of the forest. These Sca-Lions about twenty-five feet long, and nineteen or twenty in circumference, where they are largest. The teeth of the maned Lions are much larger and more solid than those of other Seals. I have more in my possession the tooth of a true Sea-Lion, the diameter of which is at least three inches, and to length (including the root) seven, and it is not one of the

largest. We have counted twenty-two such at this in the mouth of the of these lions, and five as six more had fallen out. They did not project from the bone much above an inch and a half, and were solid throughout their length. Their solidity is almost equal to that of flint, and they are of a dazzling whiteness. Many of our sailors took them for white flints, when titey found them on the shore, and it was with difficulty I could persuade them they mistaken.

These Sea-Lions me not mean savage, objects of apprehension, than the other species. They are equally heavy and clumsy in their gait, and more frequently endeavour to fly, than to those who attack them. They live upon fish, sea-birds, which they catch by surprising them, and herbs. They bring forth their young among the rushes, which grow the sea-shore, to which they retire for the night, continue to suckle them till they strong enough go out to the At sunset they they are to congregate together, and to land in troops the shore, and then the cubs call for their dams by cries the like those of lambs, and calves, and kids, that any one might be easily deceived, if he were not aware of their true nature.

"It was tated that their was very good, but I never tasted it; but I was affirm that their oil is excellent: it is obtained both by the assistance of heat, and without it, coming away spontaneously when exposed to the sun and air, when it is excellent for culinary purposes."

We shall close these accounts of the Sea-Lions by a short extract from Captain Weddell. "Near the middle of the island of Santa Cruz, on the east coast of Patagonia, is an island which is called Sea-Lion Island, from the number of these animals residing upon it. This amphibious creature is most properly denominated, from its similarity to the quadruped of that Its face is not unlike that of the lion, but, in particular, a long mane, and a bold and fierce front, which it presents when standing on its fore flippers, bear a near resemblance to that animal. A full grown Sea-Lion eleven feet from the tip of the nose to the extremity of the tail, and eight feet in circumference; the difference from the Ursine Seal being only in the particulars I have mentioned. They may, indeed, be considered belonging to a class of of the Seal kind. They meet their assailants with great ferocity, but their capture is easily accomplished."

GENUS ARCTOCEPHALUS.

We have received the only remaining group of F. Cavier, the Arctocephalus, the cranium of the type of which we present. The head is arched, will the muzzle retracted, in four central incisors on deeply bifurcated, and the lower on notched both behind to before; the modern have only on root, which liest consists of a second tabercle, with much applier its base.



THE PUSILLA, OR CAPE OTARY.

Otaria Pusilla.- DESMAREST.

PLATE XX.

Otaris Pasilla, Desm. Cav. Ph. Pusilla, Liu. Petit Phoque,

THE above cranium, typical of the genus, taken from the Cape Otary, and therefore we give it the precedence.

The mutations to which ittle Seal has been subjected have been unusually great and numerous;

it first the Seal of Mediterranean and the ancients, then a native of East Indies, and now, trust finally, has its assigned the Cape of Good Hope.

This species, according to Pagis, attains the length of four feet, and two and a half in circumference, although the common size is two and a half three feet long, with a foot a half in circumference. The head is round, and somewhat depressed, with a very short snout, and its physiognomy is agreeable. It has six incisors, the four middle ones of the upper jaw mill large and forked, each having two lobes, the one before and the other behind; the outer incisor | sharp and pointed." The whiskers are long, simple, and black | the ears are straight, and one inch and a half long; the neck is full, as is the chest; the inner finger of the fore flipper is the longest: the pails almost imperceptible, hid under the hair, and so small as scarcely to merit the appellation: the hind flippers have three very distinct nails belonging to the middle toes, whilst those of the external ones am scarcely visible; they have also m projecting and divided membrane, and the under portion of the feet is naked and hard. Its coat is soft and glossy, of a brownish colour, tending to iron-grey; the head is deeper coloured the under part, more especially the breast, is much lighter; the feet are black.

In their disposition these animals wery timid

Danbenton, Mail ziii. 414.

and sociable. When disturbed they only think of saving themselves in the sea, and bite except put himself in their way: often, however, they will nass between one's legs in their hurry, without offering the slightest injury. They easily familiarize themselves with man. "I preserved," says Mr Pagis," "two of them for eight days. The first day I put sea-water into their tub, foot and a half deep, but an they seemed anxious to avoid it, I tried fresh water, which more agreeable; I therefore them dry afterwards. On coming out of the water they shook their coats like dogs; they sneezed, too, like them, and scratched and cleaned themselves with their snout, and lay down close together they do. When the sun shone I left them on the ship's deck, and they seemed to wish to retreat except when they saw the ____ Not only did they acratch themselves each other, but they the to do it. followed them with great familiarity, and smelt them as do dogs. They had m great affection for each other, and when separated immediately endeavoured to meet: if took up the one, the other certainly followed. When fish, bread soaked in water, was offered them, they smelt it, but would not take it. They, therefore, did not thrive in their confinement, and were thrown into the sea, where they seemed in he more iii home."

We man proceed to in SEA BEARS.

[·] Apad Buffen, loc. cit.

THE URSINE SEAL, OR SEA-BEAR OF STELLER.

Otaria Ursina .- Dassta zest.

PLATE XXL

Otaria Ursina, Cuv. Des. 381. Aretocephalus Ursinus, F. Cuv. Ph. Ursina, Gm. Otaria Stelleri, Less.*

This Ursine Seal of Steller has been considered as identical with the Ursine Seal of the Southern Hemisphere, by nearly all Naturalists, and among others by Buffon, who collected all the materials he could procure of both, and applied them to all All analogy would lead us to question the propriety of this, and we have little doubt that careful examination will lead to an opposite conclusion. The following opinion of Peron's a striking—" We are convinced that under the name of Sea-Bear there really exist more than twenty Seals, which differ

In Gray's Spi. Zool, there is a cranium of what he calls Arctocephalus Lobatus, and which he says differs considerably from its the Phoes Urgins, in Zool. Journ. iv. 496.

from each other in all their minute characteristic points.* We shall first introduce the very elaborate description of Steller, supplying an abridgment of his enlarged account in nearly a literal translation.

This nearly amphibious animal, of the size of a very large Bear, resembles no animal much as that we have just named; there is a exception, in that the feet and hinder parts of the body suddenly diminish in their dimensions, become weak and slender, and terminate in conical shape; so much so, that the circumference of the body, which is five feet the shoulder, is reduced twenty inches near the tail. The length is seven and a half feet. The head especially resembles that of the Common Bear, but account of the thickness of the skin and fat, it appears larger and rounder-The mouth is very prominent, as in the Bear; the forehead rises suddenly towards the eyes; the nostrils composed of black skin, and not covered with hair ; they we oval and open ; the lips was externally tumid, and internally of a rosy hue; the whiskers are long, but not numerous; the teeth are like those of the Sea-Lion, (p. 236,) with this important difference, that they are only a quarter of the size; the apex of the tongue is bifurcated; the eyes were prominent and full, nearly as large as those of the ox, the iris is black, the pupil bright green; there we eye-lids and eye-brows, with a

Ann. des Mus. d'Hist. Nat. t. xv. 293.

membrana nictitans, by which it can protect the eye; the external man are one inch and eight lines long, conical and erect, covered with short hair; they open by me oblong slit, which is shut in the water.

This creature has four feet on which it can walk and stand somewhat like land animals. The limbs me formed of precisely the same bones, but me buried in the skin, and webbed, that the fingers of the fore-paw coalesce into one mass, m do those of the hind foot, and thus the whole become fins in swimming. The fore-legs two feet long and eight inches broad; they are not hid in the Seal, but are seen entire in quadrupeds; they are covered with hair, except the under part of the paw; on the upper part seen very slender and minute rudimentary nails, which seems to have added, that they might not be wanting, rather than they might be of use; the posterior edge is festooned in five very small curves, corresponding to the five toes. By help of the web, the animal easily raise the upper part of its body above the water, and so appear to stand erect in it. When on shore, with the hind feet folded under, it plants its paws in front, and sits m dogs often do, m that the toes then perform the office of heels.

The hind flippers and twenty-two inches long and six broad, and are of little use in walking; they adhere so closely to the body that each, indeed, can be

moved separately, but cannot the position in standing, that when the animal attempts forward land, draws its hind feet and the whole of its body behind it like an inert concealed in the body, but those forming the ankle and foot free and exposed, covered with hair; where the bones end, the flipper is divided, and its extremity appears like five straps, the extremities of which round. The nails on the great and little toes are so small that they can be of the length and breadth.

The skin wery thick, and the hair is like that of the Seal, but four times longer, standing erect, and very thick. Close to the skin there is a very soft wool, which is of a brownish-red colour. longer hair in the old males is two inches long round the neck, erect and stiff, and thus, when the animal becomes dry, it appears considerably larger than when in the water: their hairs black, and in the aged become tipped with white; the females ash-coloured, and many are partly ash-coloured and partly brown. The sking of the young much prized for clothing; and Steller says, " When I in Behring's Island, I prepared I garment for myself of voung with my own hands, and will ever retain a grateful recollection of it. The brain was much larger, comparatively speaking, than that of the Otter, and the primae vize me fifteen times

the length of the whole body, and the stomach was uniformly found empty."

These animals we found in amazing numbers in the islands off the North-West point of America, and so crowd the shore, that they oblige the traveller quit it, and scale the neighbouring rocks. They do not land much = the Asiatic coast. They ==== regularly migratory m birds of passage. They first appear off Kamskatka and the Kuriles in early spring, and then very fat, and the females all pregnant. They continue on shore for two months, during which the young are produced. Except their employment in suckling their young, they pass their time in total inactivity, the males sink into the most profound indolence and into deep sleep; they roused except by great provocation. They live in families; every male being surrounded by a seraglio of from eight to fifty females, which he guards with the jealousy of Eastern monarch. Each family keeps separate from the others, notwithstanding they lie in thousands along the shore, every family, including the young, amounting to about 100 or 120: even at ___ the distinctness of the families may be perceived.

The males show great affection for their young, and sometimes tyrannical towards their females. They are fierce in protecting their offipring, and should any some attempt to take their cub, they stand on the defensive, and the mother carries it in her mouth. Should she happen to drop it, the male

instantly quits the enemy, falls — her, and beats her against the stones, — he leaves her for dead. As soon — she ———— she crawls to his feet in the most suppliant manner, and bedews them with her tears, whilst he keeps stalking about in the most insolent manner; but if the cub is carried off, he melts likewise, sheds tears, and shows every mark of deep

Those animals which are destitute of females, and from age and deserted by them, withdraw from the society, and grow excessively splenetic, peevish, and quarrelsome; they are also very furious; and attached to their selected stations, as to prefer death to the loss of them. They are enormously fat, and emit most nauseous and rank swell. If perceives another approach its seat, he is instantly roused from his indolence, snaps at the encroacher, and gives battle. During the fight they insensibly encroach on the stations of others; this creates new offence, so that | length the civil discord spreads along the whole shore, attended with hideous growls, their note of war. Sometimes they will attack any one that passes men them; when they a person approaching, of them immediately throw themselves upon him, and the others prepare for contest: they furiously bite the stones that are thrown at them, and run upon him who throws them, and you knock their teeth and their eyes, they will not flee. In fact, none of them dare abandon his post, because the others would in that case

attack him; and if he commences if ity, the others suddenly surround and severely punish him. "I doubt not," adds Steller, "that many of would have been killed by them, could they have used their feet on land well in the water. It is dangerous to engage in contest with them in the open plain, and next to impossible to escape from them. Their awkwardness and difficulty in ascending eminences constitutes the principal safety of the assailants. Sometimes have been beset by them for six hours together; and have been obliged at last to ascend a precipice, to get rid of the infuriated creatures, at the imminent peril of my life."

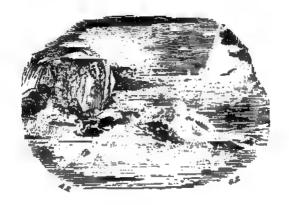
They very tenacious of life, and will live fortnight after receiving wounds which would have immediately destroyed any other animal.

Besides their notes of they have several others. When they are amusing themselves on shore, they low like a cow, and after victory chirp like a cricket; and upon receiving a wound, amplain like a whelp.

This Ursine Seal is mobject of terror to comseals and Sea-Otters, whilst is stands in awe of the Sea-Lions, and leaves to them their favourite haunts on shore. The older animals me in no fear of mankind, unless suddenly surprised, when they hurry off by thousands into the sea, swim about, and stare the novelty of their disturbers.

They swim with amazing swiftness, the rate of eight miles an hour, and often on their back; they

dive well, and continue long under water. II struck with a harpoon in that element, they drag the boat, carrying along with great impetuosity almost afflying, and will sometimes sink it. Even out of the water, the females especially can run so rapidly, that it requires a swift person to get up to them.



THE URSINE SEAL, OR SEA-BEAR OF FORSTER.

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PLATE XXII.

Otaria Ursina, Cav. Des. 881, O. Forsteril, Less. Ours Marina, Buff.

WE are satisfied that the well-instructed Naturalist will be the last to object to thus separating the Ursine Seal of the southern from that of the north-hemisphere. Not that shall attempt to establish the distinction accientific principles. Even this could easily be done, in appearance, by copying from systematic works, but we prefer withholding statements which me probably erroneous, and will at once adduce from the original authorities such real information me our space admits.

In "Dampier's Voyage," im find it stated that "these animals exist in thousands in the island of Juan Fernandez. They im the size of an ordinary calf, and their head is shaped like a dog's; their hair of different colours, as black, brownish-grey, imported, appearing very smooth and agreeable when they imported out of the water. They have so fine is short in fur, that I have seen nothing like it. There

The illustrious Cook's notice of them is very short. He tells us that "the Sea-Bears are not large by far the Sea-Lions, but they are rather larger than the Common Seal; they have none of the long hair which distinguishes the Lion, theirs being all of equal length, and finer than that of the Lion, somewhat like an Otter's, and the general colour is iron-grey."

The naturalist and companion of the great circumnavigator, in his second voyage, supplies a much particular account. The locality in which he observed it that noticed by Cook, viz. New-Year's Island in Staten Land. We soon," says Forster, "perceived that another kind of Seal occupied this part of the island. These were than the Sea-Bear, which we had already seen at Dusky Bay, but they were here infinitely more numerous, and grown to a much larger size, equal

that assigned them by Steller. They are, however, far inferior to the Sea-Lions, the males being never above eight in nine feet long, and thick in proportion. Their hair is dark brown, sprinkled with grey, and much longer on the whole body than that of the Sea-Lion, but it does me form mane. The general outline of the body, and the shape of the fins, exactly the They were more fierce towards us, and their females commonly died in defence of their young. We observed that these Sea-Bears and the Lions, though sometimes encamped on the mee beach, always kept wide asunder, and had no communication with each other. A strong stench is common to them, and to all other Seals, a circumstance well known to the ancients, as well their inactivity and drowsiness, and hence Homer-

> Web-footed Seals forsake the stormy swell, And sleep in herde, exhaling nauseous smell.

"Dr Sparman and myself were men being attacked by men of the oldest Sea-Bears men cliff where several hundreds were assembled, and where all seemed to wait the issue of the fight. The doctor had discharged his musket at a bird, and was going to pick it up, when this old Bear growled and snarled, and seemed ready to oppose him. As soon as I men near enough I shot the surly creature dead; and men that instant the whole herd, seeing their champion fallen, hurried the sea; and many of them hobbled along with such precipitation, to leap down between forty and fifty perpendicular feet

upon the pointed rocks on shore, without receiving any hurt, which may be attributed to their assily giving way, and their hide being remarkably tough."

Afterwards, when speaking of them New Georgia, he observes, "They all of the kind called Sea-Bears, and not single Lion with a mane to be seen among them. They all of the flerce than any man had seen at New-Year's Isles, and did not to run out of our way. The young cubs barked us, and man at an heels when man passed, trying to bite our legs."

The following notice of what Wood Rogers designated Sea-Bears at the Gallapagos bears their dispositions:—"A very large made me three several times, and I had not happened to have had pike-staff headed with iron, he might have killed me. I was on the level sand when he open-mouthed me from the water, ferce and quick analysis angry dog let loose. All the three times he made at me I struck the pike into his breast, which at last forced him to retire into the water, snarling with an ugly noise, and showing his long teeth."

These extracts will probably suffice to exhibit the general appearance and habits of this animal. It manifestly appears to be considerably smaller than the Sea-Lion, and at the same time is not so timid, but much man fierce. It would appear to be rather

[·] Loc. cit. vol. ii. 516-22.

In Kerr's Voyages, vol. = 374.

widely diffused, for supposing that all these refer to the species, we have the noticed in Dusky Bay, New Zealand, in New Georgia, Statten Land, Juan Fernandez, and the Gallapagos.

It will have been observed that several of these authorities, particularly Dampier and Cook, speak of the fineness of the fur of this Seal. It is probably these statements which have led the able author of the article Phoque, in the Diet, Classique d'Hist. Naturelle. atate that this Seal is the Fur-Seal of His words are-"L'Otarii de Forster | le Phoque I fourrures des pêchenrs êuropéens." Illi this == suspect is mistake. No one will doubt that Captain Weddell was familiar with the Fur-Seal. He also familiar with the Ursine-Seal, both as encountered in its haunts, and as described by Naturalists; and yet, when speaking of the Ursine-Seal, (so denominated by him,) he bints that its fur has any peculiar value, but the contrary. This important subject, however, will again come under consideration.

Lor. cit. 199.

SEA-BEAR.

FROM SPECIMEN IN BRITISH MUSEUM.

PLATE XXIII.

THOSE who remember the remark of the eminent Peron, that there are least twenty Seals which go under the good of Sea-Bear, will not be astonished that we willingly adorn wolume by a delineation of specimen in the British Museum. From the engraving of the distinguished Naturalist of the Rurick we have taken our representation of the Sea-Bear of the Northern Regions; from the plates of Buffon we have derived a representative of those of the Southern Hemisphere, supplied by Forster, the companion of Captain Cook; and though there are strong reasons for believing that these two animals are really different, yet it must be confessed marked similarity exists in the delineations; whilst the preparation in the British Museum differs considerably from both. Our attention was directed to this specimen by the kind civilities of Mr J. E. Gray, the well known officer of the National

Establishment; and Mr Fussel's spirited delineation speaks for itself.

Of the habitat and habits of this Otary believe nothing is known; and criticism might demand, What is the use of such isolated and imperfect hints? The acknowledged fact, however, that even the most advanced Naturalist in this department is but groping in the dark, supplies too satisfactory answer to all such interrogatories.

LESSON'S OTARY.

O. Molossins .- Lauson.

ATT XXIV.

O. Molozzina, Lem. (Zool. de E Coq. 140.) Platychynous Molozzinus, Less.

Lesson and Garnot are first authorities for this species, which captured in the Southern Ocean. Lesson supposes it may be the same with of the small species alluded to by Pernetty, and with that one named O. Guerin, and shortly described by Quoy and Gaimard, having been the in the Falkland Islands.

Lesson describes its forms marked and regular; the head is small and round, with a face like that of the mastiff; the nose is not prominent, and has a groove mit; the upper lip overhangs the lower, and both are edged with short hair; the whiskers me long, fawn-coloured, and man the face; the iris moreon, the eye-lashes red; the man very small, pointed, and curled upon themselves; the fore flippers are minimized by minimized by minimized by minimized by minimized.

membrane, festooned wo ledge, black and quite smooth; the fingers may be distinguished, and four rudimentary nails appear. The hind flippers closely approximate, flat, and terminated by phalanges of equal length. The three middle upplied with strong black nails an inch long; those on the external toes and quite small; the web is large, and forms five projecting portions, which are supplied with tendons proceeding from the last phalvnx; they have no hair upon them, and are quite black. The external surface of the flippers, like the other parts of the body, are covered with short close hair, whilst the arm-pits and groins, and lower side of the feet, quite naked. The length of the hair does not exceed a quarter of an inch, and the colour is a brownish-red, satin like, when the animal is alive. This Otary has thirty-six teeth, the upper incisors, flattened transversely, are separated into two lobes by a deep groove.

The animal — described — killed in the Falkland Isles. In November but few — seen, but towards the end of December they become very numerous. Lesson also noticed it on the coast of Chili in considerable numbers.

THE ASH-COLOURED AND WHITE-NECKED OTARIES.

In addition the above species, thus recently alluded to by Lesson, two others in the men-

tioned which primitarly circumstanced. Both shortly noticed by Peron in bis "Voyage;" but detailed account, believe, has hitherto been published. The is this Ash-coloured Otary (O. Cinerea) referred to in the second volume of his Voyages, page 77, and by Desmarest in his Mammologie, No. 384. Lesson, in the Dict. Classique, states, that may probably refer to this Dtary a beautiful specimen which sent to the 'aris Museum by Quoy and Gaimard, and which vas procured the South-West coast of New Holand. We have taken some trouble, which, however, has proved fruitless, to obtain a drawing of this animal. The other is the White-necked Otary, (O. Albicollis.) shortly alluded to by Peron in the same volume of his Work, and by Desmarest, No. 385. and by Lesson. This one, so far as we know, has not been depicted. But necessitated, by want of space, to take no further notice of these ascertained, though scarcely described species, we must bring our list to a close by supplying a very succinct account of one which yields in value to none, and whose history, m trust, m can somewhat elucidate. We allude to

THE COMMON FUR-SEAL OF COMMERCE.

PLATE XXV.

O. Faiklandica, Deem. No. 387. Less. Dlot. Class. Ph. Faiklandica, Pen. p. 275, Shaw. For-Seal of Commerce.

Such of our readers as may be interested in this truly valuable Seal, in a commercial and economic point of view, we beg will to the observations which will be found in the introductory portion of this volume; and such desiderate scientific details, we take the liberty of referring to paper entitled "Observations the Fur-Seal," which will be found in the Second Volume of the Annals of Natural History. In this paper, an attempt is made to prove that the Falklandica, introduced to the notice of Naturalists sixty years ago by the illustrious Pennant, in his description of a specimen which had recently been presented to the Museum of the Royal Society, and also that the Long-Necked Seal, (the Lon-

gicollis,) forming another specimen in the collection, which me first noticed by Dr Grew In 1694, and afterwards by Pennant, and distinct from his Falklandica, and by Daubenton, were both of them genuine specimens of the Fur-Seal of Commerce. But though enough, we believe, has there been said to show that there always sufficient evidence to prove the truth of this proposition, with which Naturalists, therefore, might have been perfectly familiar, yet it is a curious circumstance that this important fact me never laid hold of, and the descriptions themselves were aside munintelligible, and the animals ranked among the most obscure and apocryphal of the list. Baron Cavier, in 1823, respecting both of them exclaimed.* = Que faire de cette phoque-Que faire de cette otarie?" and Lesson, in 1828, declares that they so little known that they could not be referred to any distinct species.†

But in addition to its literary and antiquarian character, this question has a much deeper interest in a commercial and scientific point of view, and therefore happy that we have it in our power to present to the Repository of Science the first representation, so far as know, and offered of this invaluable animal, and to associate detailed and accurate description, with the facts already collected respecting habits and disposition.

This interesting account of its habits in taken

Oas. Foss. t. v. p. 1, p.

[†] Diet. Mat. t. xiñ. în loco.

from the valuable work of M. Weddell,* who, along with several other good offices performed for this department of science, conveyed to this country, and deposited in the hands of the eminent Keeper of the Museum of the University of Edinburgh, two specimens of the stuffed skins of this animal. They make now in the Museum in excellent order, and have used them to supply an Plate. In this state they are, of course, insufficient satisfactorily to establish all the scientific characters, but so far they serve, make will now present a faithful and detailed description. The specimens are very nearly alike in every respect, and appear to have been carefully and accurately prepared.

Judging from these specimens, this Seal, the whole, is long and slender, having much the shape of a double cone, largest at the middle, and tapering the extremities. The head is broad, and rather flat; the external-ear is black, narrow, pointed, and projecting backwards. The fore-paws are precisely in the middle of the body, their shape is pyramidal, and in addition the paw properly called, there is long projecting membrane running from the tip along the posterior margin to the base: they have no vestige of nails. The hind flippers are rhomboidal in their shape, and consist of the usual fleshy portion, and membranous one, which its termination is divided into five straps; there are nails

[&]quot; Voyage towards the small Pole. London, 1825.

[†] In noting the characters, we have enjoyed the valuable as-

all the toes but the great one, those of the three middle being much the largest, and quite straight; there is a curious slashing at the junction of the common skin and the membrane, the skin covered with hair descending to the nail, whilst the brane runs up between the toes than an inch. The coat m robe is composed of hair and fur; the former is very soft, smooth, and compact, of w brownish-black colour towards the root, and a greyish-white towards the tip; it extends considerably beyond the fur, and gives the general colouring to the hide: the fur itself is of a uniform brownishwhite colour above, and of a somewhat deep-brown beneath, and is quite wanting upon the extremities. The colour of the body is of a uniform lightishgrey above, passing gradually underneath into a reddish-white colour, which is deepest in the abdominal region. The upper part of the extremities is covered above with very short brownish-black hair, which, men the body, passes into the colour of the back. The under portion of both extremities. to the extent of two-thirds of the anterior, and nearly the whole of the posterior, and naked, being quite destitute of both hair and fur. The whiskers brownish-black, five rows being present the hairs as simple and tapering: In one of the specimens there is a dark marking under the eyes. We shall subjoin the principal measurements of the Edinburgh specimens, which were probably young, or females.

	Feet.	Inches.
Laugth from amout to tip of the tail,	3	3
of the tail,	0	1
68F,	0	1
from snoot to satz, edge of base of paw,	1	51
 posterior edge of paw to root of tail, 	1	51
of fore-paw from base to tip,		11
— its membranous portion,		4
- posterior extremity from best to tip,		7
· its membranous portion,		2
Greatest breadth of fore-paw # base,		4
ita point,	0	14
Breadth server and from one paw to another,	1	0
from tip of truet to the ear,		51
The angle of the mouth in the perpendicular of its	l eye.	

To this description we add that account of its habits, &c. which has been supplied, with his usual point and ability, by Captain Weddell. "Nothing," he remarks, "regarding the Fur-Seal is more actonishing than the disproportion in the size of the male and female. A large grown male, from the tip of the to the extremity of the tail, is six feet nine inches, while the female is not than three and a half feet. This class of the males, however, is not the most numerous, but, being physically the most powerful, they keep in their possession all the females, to the exclusion of the younger branches; hence, at the time of parturition, the males attending the females may be computed - one to twenty, which shows to be, perhaps, the polygamous of large animals.

They in their nature completely gregarious; but they flock together, and assemble in the coast in different periods, and in distinct classes. The males of the largest size go on shore about the middle

of November to wait the arrival of the females, who of necessity must must follow, for the purpose of bringing forth their young. These, in the early part of December, begin to land; and they me no out of the water, than they are taken possession of by the males, who have many serious battles with each other in procuring their respective glios; and by a peculiar instinct they carefully protect the females under their charge, during the whole period of gestation. By the end of December all the female Seals have accomplished the purpose of their landing. The time of gestation may be considered nearly twelve months; and they seldom have than a time, which they suckle and rear apparently with great affection. By the middle of February the young and able to take the water, and after being taught to swim by the mother, they abandon them on the shore, where they remain till their of fur and hair are completed. During the latter end of February, what called the Dog-Seals go m shore; these are the young Seals of the two preceding years, and such males as, from their want of age and strength, not allowed to attend the pregnant females. These young Seals come on shore for the purpose of newing their annual coats, which being done, by the end of April they take the water, and scarcely any are seen an shore again till the end of June, when some young males come up, and go III alternately. They continue do this for six or weeks, and the shores are then again abandoned

the end of August, when a herd of small young Seals, of both sexes, come on shore for about five six weeks, and then retire to the water. The large male take up their places on shore, as been before described, which completes the intercourse classes have with the shore during the whole year. The young are first black; in few weeks they become grey; and first black; in the few weeks they become grey; and first black in their the of hair the fur.

"When these South Shetland Seals men first visited, they had apprehension of danger from meeting men; in fact, they would lie still while their neighbours killed and skinned; but, latterly, they had acquired habits for counteracting danger, by placing themselves on rocks, from which they could, in moment, precipitate themselves into the water. The agility of this creature is almost greater than, from its appearance, an observer would anticipate. I have them, indeed, often escape from men running fast in pursuit to kill them. The abourd story, that Seals in general defend themselves by throwing stones at their pursuers with their tails, may be explained in this way; that when an animal is chased on a stony beach, their mode of propelling themselves is by drawing their hinder flippers forward, thereby shortening the body, and projecting themselves by the tail, which, when relieved from the effort by the fore flippers, throws up a quantity of to the distance of some vards. Their sense of smell and hearing acute, and in instinct they are little inferior to and dog, that is, I judge their

sagacity in the water much exceeds that which they exhibit in shore; for though they are in a remain a certain time on land, their native element is the water."

The for skin of this valuable animal is prepared for the market in a different from what memployed in the preparation of most others. The long hair, which conceals the for, in the removed, and this is done by heating the skin, and then carding it with a large wooden knife prepared for the purpose. The fur then appears in the its perfection, and sells in China for about two or three dollars, and in England (where, indeed, they are now scarcely to be found) about three times that price. Not many years ago they were used in linings and borders of closks and mantles, and for far-caps, &c. &c.



DOUBTFUL SEALS AND OTARIES.

Ribbon-Seel. Phoen Pasciata, Shaw.

In addition to the Scale which are well ascertained. Naturalists have been in the habit of giving a list of those which have been indicated by some respectable authority, but so slightly as still to remain doubtful. We men follow this example, mencing with the Ribbon-Seal of Pennant. This is characterized by a very abort fine, glossy, bristly hair, of a uniform colour, almost black, marked along the sides, and towards the head and tail, with stripe of a pale vellow colour, exactly resembling a ribbon laid on by art. The very curious form is represented above, from a drawing communicated by the celebrated Pallas . Mr Pennant. Of the animal generally nothing | known, though it appeared to be large. was transmitted from of the remotest Kurile Islands.

The following list, which might be much extended, is taken chiefly from the recent French Naturalists.

Seals-	Otaries.
Phoca Coxii,	O. Porcina.
Lupina.	- Coronata.
- Punctata.	- Delalandii.
	- Hanvilli.

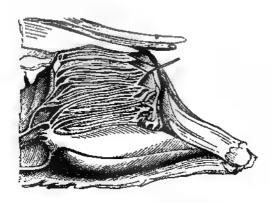
We close this list of doubtful Seals by alluding to the still was doubtful

ALLEGED SEA-APE.

It may increase the interest felt regarding the alleged existence of an animal under this to introduce it in association with the peculiar views supported by Marson. "In the circle of the Ferse the natatorial type is represented by the Seals, and the corresponding type of the Quadrumana is present most assuredly wanting. Whatever its precise construction may, might have been, a blance to the Monkeys be considered sential character of any marine animal, which to connect and complete the circular series of types in the Quadrumana. That such creature has really been created have not, says S, a shadow of a doubt; and in confirmation of this belief,

Classificat. of Quad. Lard, Cyc. p. 97.

■ Simia Marina, which be states we found in the Red Sea. Aldrovandia copies this, and supplies we representation not were rude than apocryphal. A second, still were singular, he gives from Gesner.



It only after the foregoing pages had gone to press that the following account of the distribution of the olfactory nerve attracted no notice; in the bears of directly on the somewhat obscure subject of the development of the nervous system, and more especially of the senses, of the Seal group, and completely confirms the sentiments we ventured to express on the point, p. 69, that on deem it pedient, even here; to introduce the accompanying wood-cut and explanation, derived, we believe, from

[■] De Piscibos, p. 405,

the following quotation from Steller adduced:-M Steller on the coast of America very singular animal, which he calls a Sea-Ape. It five feet long; the head was like a dog's; the sharp and erect, and the eyes large; there both lips a sort of beard. The form of its body thick and round, being thickest near the head and tapering to the tail, which was bifurcated, and the upper lobe men 'the longest; the body covered with thick hair, grey on the back, and red on the belly. Steller could discover neither paw foot. It was full of frolic, and played a thousand monkey tricks; sometimes swimming on one side. sometimes on the other, of the ship, looking it with great amazement. I would come in the ship, that it might be touched with a pole; but if any one stirred, it would immediately retire. It often raised one-third of its body out of the water, and stood erect for a considerable time; it then suddenly darted under the ship, and appeared in the analattitude on the other side; and it would repeat this thirty times together. I would frequently bring up a sea plant, not unlike a bottle gourd, which would about and catch again in its mouth, playing numberless fantastic tricks with it."4 This is not the place to trace the history of this alleged animal, which more familiarly, do not say accurately, known in the days of Steller than ■ the present time. ■ gives a description ■

Pennant's Quad. vol. ii. p. 301.

the Comparative Austomy and Physiology of B. Harwood:- "In carnivorous quadruneds the structure of the hones in the nasal cavity more intricate than in the herbivorous, | calculated to a far more extensive surface for the distribution of the ____ In the Scal this conformation is most fully developed, and the bony plates me here not turbinated, but ramified shown in the woodcut. Eight or more principal branches arise from the main trunk, and each of these is afterwards divided and subdivided . degree of minuteness, so to form in all many hundred plates. The offactory membrane, with all its nerves, is closely applied to every plate in this vast assemblage, as well as to the main trunk, and to the internal surface of the surrounding cavity, so that be less than 120 square inches in each nostril. An organ of such exquisite sensibility regulres an extraordinary provision for securing it against injury, and Nature has supplied a mechanism for the purpose, enabling the animal to close at pleasure the orifice of the nostril."

[·] Roget, Bridgewater Treatise, vol. ii. p. 402.

GROUP IL

HERBIVOROUS CETACEA.

Of the fabled nymphs, 'tis foolishly declared. They chase the warrior shark, the cumbrous whale, And geard the mermaid in her briny vale.

Our declining space prevents us from saying the classification of this small and interesting group than what has already appeared in the Introduction. Though individuals belonging it exist in large herds in many quarters of the globe, yet, till within a few years, not am had been man in the civilized world, nor had any correct description and delineation been supplied. And yet the most intense interest was experienced regarding the family, not only by the man of science, but by the public at large. There be doubt that in many instances they formed the type of those ideal objects of ancient poetry, the tritonse half men and fish, who had power, forsooth, to calm the stormy surge, and probably, too, of the syrens, those mymphs whose melody charmed the entranced voyager to his destruction! The fancies of the northern nations. not less imaginative. "Beneath the depths of the ocean, an atmosphere exists adapted to the respiring organs of certain beings resembling, in form, the human race, who possessed of passing beauty, of limited supernatural powers, and liable to the incidents of death. They dwell in a wide territory of the globe far below the region of fishes. which the sea, like the cloudy canopy of sky, loftily rolls, and there they possess habitations constructed of the pearly and coralline productions of the ocean. Having lungs not adapted to a watery medium, but me the nature of atmospheric air, it would be impossible for them to pass through the volume of waters that intervenes between the submarine in the supramarine world, if it not for their extraordinary power of entering the skin of animal capable of existing in the ___ One shape they put on is that of _ animal human above the waist, yet terminating below in the tail of a fish; and thus possessing an amphibious nature, they are enabled not only to exist in the ocean, but to land on the shores, where they frequently lighten themselves of their and dress, sume their proper shape, and with much curiosity examine the nature of this upper world."*

But an must endeavour to give an readers a

^{*} Hibbert's Shetland Islands, 4to, p.

many years ago the Wernerian Natural History Society (and to its praise me tell it) publicly offered a prize of considerable pecuniary value to the individual who would first present them with one of these far-famed animals; and by many this offer was regarded = proof of weakness and credulity. Not long afterwards, however, the following statements appeared in one of the periodicals of the day, for the general truth of which, from personal knowledge of some of the parties, we wouch. short while ago it reported that a fishing boat, off the island of Yell, one of the Shetland group, had captured a mermaid by its getting entangled in the lines!! The statement is, that the animal about three feet long, the upper part of the body resembling the human, with protuberant mamma like woman; the face, forehead, and neck, short, and resembling those of a monkey; the arms, which were small, kept folded across the breast; the fingers distinct, not webbed; few stiff long bristles the top of the head, extending down to the shoulders, and them it could erect and depress at pleasure, something like a crest. The inferior part of the body was like a fish. The skin was smooth, and of a grey colour. It offered no resistance, attempted to bite, but uttered a low plaintive sound. The crew, six in number, took it within their boat, but superstition getting the better of curiosity, they carefully disentangled it from the lines, and a hook which had accidentally fastened in its body, and returned it to its native

element. Instantly dived, descending in a perpendicular direction."

After writing the above, (we are informed,) the narrator had an interview with the skipper of the boat and of the crew, from whom he learned the following additional particulars. They had the animal for three hours within the boat; the body without scales or hair; of a silvery grey colour above, and white below, like the human skin no gills were observed; nor fine the back or belly. The tail like that of the dog-fish; the were about as large as those of woman; the mouth and lips wery distinct, and resembled the human.

This communication from Mr Edmondston, a well known and intelligent observer, to the distinguished Professor of Natural History in the Edinburgh University, and Mr E. adds a few reflections. which are pertinent, that we shall avail ourselves of them. "That a very peculiar animal has been taken, no one man doubt. It was an and handled by six men, cocasion, and for time, not one of whom dreams of a doubt of its being a Mermaid. If it supposed that their fears magnified its supposed resemblance to the human form. it must at all events be admitted that there ground for exciting these fears. But no such fears were likely to be entertained; for the Mermaid not mobject of terror muthe fisherman; it is rather welcome guest, and danger is apprehended only from its experiencing bad treatment. The usual of scepticism, that the Scale and other Sca-Animals, appearing under certain circumstances, operating upon excited imagination, and so producing ocular illusion, cannot avail here. It is quite impossible that, under the circumstances, six Shetland fishermen could commit such mistake."

Having thus supplied a narrative of a personal interview with . Mermaid, we shall next do as much for the Merman. " About mile from the coast of Denmark, near Landscrone, three sailors, observing something like a dead body floating in the water, rowed towards it. When they came within or eight fathoms, it still appeared as at first, for it had not stirred; but at that instant it sunk, and came up almost immediately in the place. Upon this, out of fear, they lay still. and then let the boat float, that they might the better examine the monster, which, by the help of the current. He turned his face and stared at them, which gave them a good opportunity of examining him narrowly; he stood in the man place for minutes, and seen above the water breast-high: At last they grew apprehensive of some danger, and began to retire; upon which the blew up his cheeks, and made a kind of roaring noise, and then dived from their view." In regard in his form, they declare in thei affidavits, which were regularly taken

[·] Edinburgh Magazine, vol. ziñ.

and recorded, that "he appeared like an old man, strong-limbed, with shoulders, but his they could not see. head was small in proportion to his body, and short curled black hair, which did not reach below his ears; his eyes lay deep in his head, and he meagre face, with black beard; about the body and downwards this

MERMEN

Merman sur quite pointed like a fish."*

As illustrating the habits, and still seems as bearing on the voice, a noted power of these strange creatures, thus distinguished by the great dramatist with not less fancy than fable—

> I heard a Mermaid on a dolphin's bace.— Uttering sucil dulcet and harmonious breath, That the rude sea grow civil at her song.....

We shall transcribe the account of two incidents which were observed in the Southern Hemisphere.

A very singular circumstance happened," says Captain Coinett, "off the coast of Chili, in lat. So, which, as it spread some alarm among my people, and awakened their superstitious apprehensions, I shall mention. About eight o'clock in the evening animal rose alongside the ship, and uttered such shricks and tones of lamentation, an much like those produced by the female human voice when expressing the deepest distress, as to occasion no small degree of alarm among those who first heard it. These cries continued for upwards of three

Pontopildon's Hist, of Norway, p. 154.

hours, and seemed to increase as the ship sailed from it. I never heard any noise whatever that approached those sounds which proceed from the organs of utterance in the human species." Captain C. subsequently mentions that one man so panic-struck, that had he been much longer in landing he would certainly have died.* And finally, to bring these narratives to a close-" A boat's crew," says Captain Weddell, "were employed in Hall's Island, when one of the crew, left to take care of some produce. an animal whose voice was even musical. The sailor had lain down, and about ten o'clock he heard moise resembling human cries; and as day-light in these latitudes never disappears at this season, he and looked round; but, on seeing no person, returned to bed; presently he heard the noise again; rose a second time, but still saw nothing. Conceiving, however, the possibility of a boat being upset, and that some of the crew might be clinging to some detached rocks, he walked along the beach a few steps, and heard the noise man distinctly, but in a musical strain. Upon searching round he saw an object lying am a rock a dozen vards from the shore, at which he was somewhat frightened. The face and shoulders appeared of human form, and of a reddish colour; over the shoulders hung long green hair; the tail resembled that of the Seal, but the extremities of the arms he could not see distinctly. The creature continued

to make a musical noise while he gazed about two minutes, and an perceiving him it disappeared in instant. Immediately when the man and his officer, he told this wild tale, and to add to the weight of his testimony, (being Romanist,) he made a cross the sand which he kissed, making oath to the truth of his statement. When I saw him, he told the story in clear and positive a manner, making oath to its truth, that I concluded he must really have seen the animal he described, that it must have been the effects of a disturbed imagination."

We adduce these few as examples of the many statements which from time to time have been made. At the moment, the fact is a matter of nine days' wonder; it is then speedily obscured in the mists of forgetfulness , those who would be thought knowing than their neighbours treat the whole affair with scepticism and derision, and mankind generally left in the uncertainty and ignorance in which they were before. We believe there as much general intelligence concerning this class of animals two mu three hundred years ago mu there is at the present day; or, to put it in propriate words, that there is as much prevailing ignorance now as there has been at any former period. Among the preceding incidents, that derived from Shetland occurred in 1823, and since that time me not aware that any additional facts

^{*} Voyage towards the South Pole, p. 143.

have been supplied for general information. We have no doubt that though there much truth the narratives, there also much error; and now, so far can, supply our readers with such information will enable them to correct these errors, and to read aright all such histories.

It is here, however, only right to add, that these marvellous stories of Mermaids not to be ciated only with the herbivorous cete me to introduced to notice. Large allowance must be made for the workings of mexcited imagination, in situstions of solitude and apprehension, on the unexpecteu appearance of an extraordinary and unknown object. In many instances, even the animals whose histories have been reviewing, viz. the Walrus and the Seals, have unquestionably been the originals which supplied, to wide and credulous circles, the subject-matter of their astonishment and wonder. It will be in the recollection of the reader that we have previously quoted Scoresby's words-" I have myself sees a Sea-Horse under such circumstances, that it required little stretch of imagination to mistake it for a human being, and the surgeon actually reported to me that he had seen with his head above the water." Many of these narratives have had their origin in the Northern nations, where the herbivorous cete are certainly rare; and this fact quite harmonizes with the more enlightened belief in these regions, that it is generally some species of Seal, very frequently the Barbata Haaf-Seal, which, from its more solitary habits, has given rise to these legends. And, once more, we have little doubt that the young, especially, of certain species of Whales, from their striking fashion of raising their heads perpendicularly above the wave, and so taking a deliberate survey of surrounding objects, may occasionally have led to the more result. Thus, then, in the ordinary cete, and in the Walrus and Seals, as well in more herbivorous cete, are more to recognize the original types of nearly these wondrous tales.

The small group, forming the herbivorous cete, is now divided into three genera, and about twice as many species: it consists of the Manatee of the West Indies, the Dugong of Eastern Seas, and the Stellerus, inhabitant of the polar regions. As to their general character, may note that their head is scarcely distinguished from the body by any neck; they have no blow-holes - the summit of the head, but nostrils on their snout; the shape of their body is pisciform; they have me dorsal fin; their tail is horizontal like that of the other cete, and they have not the rudiments of the posterior extremity; their pectorals are quite swimming paws; their mamme are pectoral; their skin is nearly destitute of hair, and their teeth me not those of carnivorous but of herbivorous animals.

We man proceed to the genera and species.

GENUS MANATUS, Cuv. Tricheches, Lin.

The Manatus derives its principal generic character from its awimming paws; these, different from what appears in its congeners, have four flat sails attached in the edge of the fin. The tall, too, is characteristic, being oval-shaped and long, extending to about one-fourth of the body.

THE MANATEE OF THE WEST INDIES.

PLATE XXVL

Manatus Americanus, Cuv. Deam. Less.

WE are bappy that, from the attention of the Duke of Manchester in transmitting specimen of this animal to the Royal Society, we present our readers with a faithful likeness taken from the Philosophical Transactions for 1821. This individual a young one, which had not attained above quarter of its full dimensions.

will be observed that the form of the body is elongated. When fully grown, the animal attains, and often surpasses, the length of twenty feet, and weighs not less than three or four tons; twelve or fifteen feet are, however, its more dimensions. The head is conical, without any mark of depression at its junction with the body the muzzle is large and fleshy, and its upper part is semicircular, where two semi-lunar nostrils open. The upper lip is full and cleft in the middle. Two tufts of stiff bristles, of considerable size, situated

its sides; the lower lip is shorter, and straight than the upper, and both in lined internally with short, hard, very thick bairs. The mouth is not large; the eves are small. The only appearance of ears are two small fissures, which penetrate the skin. The swimming paws are much more free in their motions than those of the ordinary cete: the fingers me felt through the skin, and they posconsiderable power and motion. The thumb has no nail; the fingers have, though that of the little finger is particularly small. The surface of the body is of a greyish colour; the skin is coarsegrained, and very thick and strong, like a bull's hide: a few scattered and slender hairs appear upon it. most at the angle of the mouth, and under the paws. The mamme, which are usually but little developed, enlarge during the period of lactation, and the milk agreeable to the taste. The number of the vertebrae and the ribs is variously stated by Sir E. Home and Baron Cuvier. Both agree that the ribs are quite peculiar in their form.

The manners and dispositions of this animal stated to be inoffensive, mild, and amiable. Buffon observes, that they are both intelligent and sociable, naturally not afraid of man, but free in approaching him, and following him with confidence. But they have especially a kindly feeling for their fellows. They usually associate in troops, and crowd together with the young in the centre, if to protect them from harm, and when any danger besets them, each is

willing to bear its share in mutual defence attack. When one has been struck with a harpoon, it has been noticed that the others tear the weapon from the flesh; and usually if the cubs be taken, the mother acareless of her preservation, while the mother be taken, the young follow her the shore, where they themselves are captured.

The Manatus is not found in deep waters. It frequents the shallow bays among the West Indian Islands, and the sheltered creeks in the South American continent, particularly Guiana and the Brazila. It was, in former times, especially the mouths of those vast rivers, the Oronoco and the Amazons, that these cete delighted, and lived in innumerable shoals. They also ascended many hundreds of miles, frequented their tributaries, and peopled the fresh water lakes connected with them; and in these places were sometimes observed to be frolicsome, and to leap, me do the ordinary Whales, to great heights out of the water. The historian Binet remarked, that in his time there were certain places within ten metwelve leagues of Cayenne where they so abounded, that a large boatful could be procured in m day; and that they sold in the market for about threepence per pound. But the high estimation in which their flesh was generally held, and the avidity with which they were pursued, led ere long to a vast thinning of their numbers, till finally they have been almost exterminated those countries which thickly peopled.

The mode which they were captured at St

Domingo, according to Oviedo, == follows :---They approached in a small boat, and struck with slarge harpoon, to which slong and strong cord attached. As as struck they make great efforts to escape, carrying the harpoon and cord along with them; to the extremity of the latcork, m piece of light wood, is affixed, which buoy, and indicates the movements of the wounded individual. Their victim being thus seized, his assailants return to shore, bringing them along with the end of the rope, and when the animal becomes exhausted, they begin to draw it shore and despatch it." This perfectly agrees with the account - read in " The familiar Description of the Mosquito Kingdom."-" They yield the sporter no small diversion; for after having a dart or harpoon struck into their side, with a long line and buoy fastened to it, they hold some time in play, and will not leave the shoals, by which means they receive many lances and from the Indiana before they will be taken; many times they upset the boat in struggling."6

From this same work we extract the author's testimony regarding their excellency man article of food:—"Their best fish is the Manatee. Most travellers in these parts that I have call it the best fish, if not flesh, in the world. They are sometimes found straggling in the lagunes in this try, but are not suffered increase, through the

^{*} Collection of Voyages, &c. fol. vol. vi. 312,

greediness of the Indian, who spares no pains when he has the prospect of getting any. The most we very white and of a pleasant taste, and many ships' companies have often experienced the virtues of it in the recovery of their healths." Modern authors generally corroborate these statements. They uniformly affirm that the flesh is excellent, tasting more like beef than fish. Gumilla states that the flesh of those of the Oronoco, when roasted, has the flavour of pork and the taste of veal, and when salted makes excellent makes

The said of animal belonging to this genus said to have come ashore at Newhaven, in the Frith of Forth, in the said of 1785. It had, however, been long dead, and was much destroyed, that III Stewart, who examined it, could not determine the species. Duhamel also mentions that a female Manatus, with its cub, thrown ashore near Dieppe, where it was regarded an extraordinary

M. SENEGALENSIS, Adamson, Cav. Deput

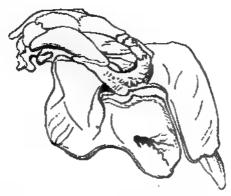
THE celebrated Naturalist Adanson was the first to notice this animal, which M. F. Cuvier, from examination of its cranium, has separated from the former. It frequents the rivers and shores of West
Africa. and especially of Senegal. Adanson, we

believe, minutely studied history, but did not publish the result of his labours. Mr Pennant, along with his short description, gives plate of young which he found in the Leverian Museum, and which had been captured in the Senegal. This specimen was six and a half feet long, though they grow, he adds, to the length of fourteen and fifteen feet. They we also very fat, and the fat adheres to the skin in the form of blubber.

Dr Harlan has published an account of what he considers another Manatus, under the minuted Latirostris, and which appears to inhabit the great rivers of the Floridas.† Most Naturalists suppose that other living species still remain to be described; and Baron Cuvier has discovered several fossil bones of the genus.

We now proceed to the

Hist. of Quadrupeds, vol. ii. p. 296,
 Philad. Jour. of Nat. Scien., vol. iii.



GENUS DUGUNGUS, Camper, Lacépède, Lesson, Halicore, Illiger, Desm. Fr. Cav. Mormaid, Sca-Cow.

This genus differs most conspicuously from the last, in that it has no vestige of nails, and in its tail not being rounded, but forked, like that of Whales.

THE DUGONG.

PLATE XXVIL

Dugungus Indieus, Less. Halicore Dugong, F. Cav. Halicore Indicus, Deem. No. 751. The Dugong.

In the year 1820, Sir E. Home stated in the Royal Society, that specimen had been seen of size by any who was conversant with comparative anatomy. About period, however, owing chiefly to the exertions of our illustrious countrymen, Sir T. Raffles, several specimens were procured, and some of these, with accurate accounts, were trans-

mitted both to this country and to France.* Our plate, which of a young animal, to exertions, and we happy to earich pages with some extracts from his clear and simple history. In its general form the Dugong resembles the common cete. The skin a smooth and thick, bluish above and white beneath, with m few remote and scattered hairs: the mamuse situated on the chest under the fins. The head is small in proportion, and of a peculiar form. The upper lip is very large, thick, and obliquely truncated, forming a short, thick, and nearly vertical kind of snout, something like the trunk of the Elephant cut short across. The surface of the truncated portion is covered with soft papillæ, and furnished with a few bristles; the lips are govered with a horny substance, which sists in tearing the sea weeds for food. Two short tusks project forward from the extremity of the upper jaw, and mearly covered by the upper lip, which is very moveable and tumid at the margin. The lower lip is much smaller, and resembles a round or oblong chin. To assist the animal in browsing upon the submarine vegetables which form its food, the anterior part of the jaw is bent downwards at m angle, in such way to bring the mouth into nearly a vertical position. There are no cauine teeth. The molars twelve in number, six in each jaw, 'placed back on the borizontal

100000

Such of me readers m have me opportunity, may see me of these animals, both young, in the Museum of the Edinburgh University.

portion. The nostrils situated on the summit of the upper jaw, where it makes its curvature downwards; they penetrate obliquely in such manner, that the upper semilunar edge, pressing upon the lower surface, forms a perfect valve, which may be shut in the will of the animal. The eyes mail, and supplied with in third eye-lid. The aperture of the ear is so minute, that it can only with difficulty be perceived. The paws offer no appearance of nails, but are somewhat verrucose in warty in their anterior margin; they are thick and fleshy, and neither from their form is size capable of supporting or assisting the animal out of the water; the tail is broad and crescent-shaped.

_

The skin is three quarters of an inch thick, and yields no oil. The is remarkable for the peculiar in which the anterior part of the upper jaw is bent downwards, almost at right angle, as to form a kind of beak. The lower jaw is truncated in such a way, to correspond and become parallel with the elongated portion of the upper jaw. The vertebres in fifty-two in number, seven to the neck, eighteen to the back, and twenty-seven to the tail; ribs eighteen pair. The greatest peculiarity of this animal is, that the ventricles of the heart are widely detached from each other, being connected at their base only. Another singular circumstance is, that the inside of their cheeks is studded with strong projecting bristles.

The food of the Dugong appears to consist exclusively of the fuci and algae, which it finds at the According to the natives of Sumatra, the Dugong is never found on land, or in fresh water, but generally in the shallows of the sea, when the water is only two m three fathoms deep. "During our short possession of Singapore," says Sir Thomas, (for six months.) "four of these animals taken; but the greatest number is said to be caught during the opposite, - Northern Monsoon, where the sea is calmest, near the mouth of the Johore River. They are usually taken by spearing, (at which the natives peculiarly dexterous,) during the night, when the animals give warning of their approach by the snuffling noise they make at the surface of the water. The first object is to _____ and elevate the tail, when the animal becomes perfectly powerless, and at their disposal. They seldom caught in Singapore above eight or nine fect in length; but how much larger they grow is not ascertained, as, when they exceed this size, their superior strength enables them to make their escape when attacked."

The Ikan Dugong is considered by the Malays as a royal fish, and the king is entitled to all that are taken. The flesh is highly prized, and considered by them m superior to that of the buffulo or cow. The affection of the mother for its young is

strongly marked; and the Malays make frequent allusion this animal as an example of maternal affection. When they succeed in taking young one, they feel themselves certain of the mother, who follows it, and allows herself to be speared and taken almost without resistance. The young have short sharp cry, which they frequently repeat, and it is said that they shed tears. These tears are carefully preserved by the people charm, the possession of which is supposed to cure the affections of those to whom they attacted in the manner they attract the mother to her young; "an idea," remarks Sir Thomas, "at least poetic, and certainly more natural than the fable of the siren's song."

There seems little doubt that there many species of this curious animal inhabiting the East-Seas. Ed. Ruppel has given a description of the Dugong of the Red Sea. He considers it different from that of the Indian Seas, and has named it Halicore tabernaculus, in consequence of his historical researches having led him to the conclusion, that it with the skin of this species that the Jews ordered to veil their Tabernacle. The Arabians esteem it for its flesh, teeth, and skin. Ruppel observed it swimming among the coral banks on the coast of Abyssinia, the Dalac Isles. The fishermen call it Davila. They harpooned a female feet long, which our traveller dissected

and described. He was informed by the Arabs that these Dugongs live in pairs mesmall families—that their voices are very feeble—that they feed malge—and that, in the months of February and March, bloody combats take place among the males. The females produce in November and December. The former sex attains the length of eighteen feet, the latter never equals these dimensions.

The respectable voyager, Lequat, describes the Dugong coccurring in great numbers in the Isle of France in 1720. He states they were twenty feet long. and were captured with the greatest facility. They feed in troops like sheep, in three or four fathoms water, and did not attempt to escape when approached, m that selection could be made, and they were shot at the end of the musket; m sometimes two or three of the party seized hold of one and forced it on shore. Three or four hundred were occasionally encountered together; and they were ittle shy, that they allowed themselves be handled at pleasure, and thus were the fattest selected. The natives here avoided. - have noticed the Malays also do, a contest with the larger animals. me account of the great trouble which they occasioned, and also because they mot such good eating the smaller

It is the popular belief of the Malays, that two species frequent their coast; and M.F. Cuvier states, that there considerable differences between the Malay

varieties which been procured from the Philipines. It would appear that the animal is also known in the coast of New Holland, and there is supposed, according to Quoy and Gaimard, to differ from those of the Indian Archipelago. is occasionally also found in the Pacific.

We was proceed as

THE STELLERUS.

GENUS STELLERUS ... COVIER.

Having a single and peculiar kind of tooth in _____ jaw; paws _____ spectrumes of nails; ____ remarkably thick and bard.

Stallerus Borenlis, Desm. Loss. Manetus Steller, Pen. Maskaia,

— Sea-Cow of Int. Russiana.

THEFE is, perhaps, less known of this animal any of its congeners: scarcely any thing has been added to information since the publication of Steller's account," so that the have been entertain doubts of its existence. Such scepticism, however, a quite unwarrantable, after the patient labours of the celebrated naturalist of the Rurick. Something like a corroboration of Steller's account may, we think, be found in "Cook's Voyages." The celebrated navigator, when dwelling upon one of the Fox Islands, at no great distance from Behring's Straits, after mentioning the Seals and Walrus there encountered, adds—"We cometimes are an animal with a head the Seal's, which blew after

^{*} See Nov. Comment. Acad. Petrop. t. ii. p. 2000

the manner of Whales. It was larger than a Seal : its colour was white, with some dark spots."4 In all probability this of the herbivorous cete: and ____ this the case, it could scarcely be any other than the Stellenis.

The head of this species is small, oblong, and obtuse, and hangs down; the mouth, too, is small, and the lips appear double, that is to say, there external and internal lips. When approximated. the void space between them is filled with a thick mass of strong bristles, which are white, and inch and a half long, and as thick m pigeon's quills. Those are to this creature what the whalebone is to the largest whales. But the masticating upparatus is still singular, and quite peculiar. It does not consist of teeth, of which this animal has none, but of two large white horny substances which adhere. the one to the palate, and the other to the lower jaw. Even the insertion of these substances is peculiar: not being into the bones, but into the superincumbent soft parts. They mot bony but horny, composed of fibres agglutinated to each other like the horn of the rhinoceros.† The nostrils at the end of the snout, and am lined with strong hair. There is mexternal ear, and the aperture is small. The eyes - small and deep set; the iris black, the livid; the tongue pointed and small: the paws ___ about two feet

[■] Cook's Voyages, vol. ii. | 517, 4to edit. † See Brandt, Mem. | Petersburgh Acad, 6th scries, vol. ii.

long, destitute of nails, but terminating in sort of hoof, lined with bristles. The skin is dark, rugged, and knotty, like the bark of moid oak. In fact, according to Cuvier, the scarf skin is a kind of bark, composed of fibres or tubes closely packed. perpendicular to the skin. The fibres implanted into the true skin by small bulbs, so that when this epidermis is pulled off, the skin is remarkably rough and almost shaggy; it has hairs upon it, as may easily be supposed, for the fibres me nothing man than hairs soldered together, forming a kind of cui-In a word, the animal is completely clad in a substance similar to the hoof of cattle, or of the Elephant. This hide is an inch thick, and so hard us scarcely to be cut with an axe; and when cut, it appears in the inside like ebony. This skin is of singular use to the animal; during winter in protecting it against the ice, among which it often feeds, or the sharp-pointed rocks, against which it is often dashed by the furious storm; and during in guarding it against the rays of the never setting and scorching "This integument is m essential to its preservation, that Steller believes that many are killed by its accidental erosion. The tail is also black, ending in a stiff fin, composed of laminæ like whalebone, and fringed with fibres nearly nine inches long; it is crescent-shaped. It has two pectoral _____ The milk is thick and sweet, not unlike that of the ewe. The superior part of the body is very thick, gradually becoming slender the tail; the abdomen is large and tumid,

This animal grows the length of twenty-eight feet. The following are the proportions of one somewhat less, measured by Steller. Length from nose to end of the tail, twenty-four and a half from to setting on of the swimming paws, four feet four inches; circumference of head above the nostrils, two feet inches; at the neck, nearly feet; and shoulders, twelve; abdomen, twenty; width of tail, six and shalf feet. The weight of a large was is 8000 pounds. The vertebræ are given, 6, 19, 35.—in all to 60. The heart of this animal, minutely described by Steller, is precisely the same in shape and construction that of the Dugong already dwelt upon.

These animals were principally seen on the shores of Behring's Straits. They are also sometimes seen Kamtschatka, and in the Bay of Awatscha.

They frequent the shallow parts of the shore, and the estuaries of the rivers, where they appear in great troops. The older surround the younger apparently in the way of protection. They are so tame as to suffer themselves to be handled; if roughly treated they remove towards the but soon forget the injury return. Sometimes they appear in families should not be another, each of which consists of male and female, half grown, and a cub; the families often unite and form vast droves. They most harmless and innocent in their man and most strongly attached to another. When hooked, the whole herd will attempt its rescue; some will strive to overset the

boat, by going beneath it; others will fling themselves on the rope in order to break it, and others
will endeavour to force the instrument from the
hold. Their conjugal affection is most striking:
male, after using all its endeavours to relieve its
which to been struck, following it to the
water's edge, whence no blows could force it to depart. As long on she continued in the water he
attended; and man for three, days after her death,
he man observed to remain in expectation of her
return.

....

They are most voracious creatures, and feed with their head under water, quite inattentive to the boats, or any thing passes around them I moving and swimming gently after another, sometimes with great portion of their back out of the water. Every and then they elevate their nose to take breath, and make noise like the snorting of horses.

They taken at Behring's Island by great hook to long rope, which taken into boat, and rowed amidst the herd. When the mimal struck, the loose end of the rope conveyed to land, where seized by about thirty people, who with great difficulty drew it shore. The poor creature made the strongest resistance, assisted by its companions, and clinging to rocks with the greatest pertinacity. In summer they were fat, in winter quite lean.

The skin is used by the natives to their boats. The fat, which the whole body like

a thick blubber, — esteemed as good as "May butter." The flesh of the old, when well boiled, resembled beef; and that of the young, veal. The crew preserved several casks of it, which — found of excellent service in their escape from their horrible confinement.

It is very generally supposed that there are other species of this genus besides the above, but concerning these nothing satisfactory has been determined.

GROUP III.

= III. mara multa intent.".... Operan.

We was now, in conclusion, to offer a few remarks on those two strange and extraordinary animals to which we shortly adverted in the Introduction. And, first, of

THE GREAT SEA-SERPENT.

Scoliophie Atlanticus? Linu. Soc. of Boston.



From Wern. Trans. vol. i.

That much fable and exaggeration have been mixed up with the history of the Great Sea-Serpent, cannot be doubted; still, however, the inquiry recurs, what portion of truth is involved amidst this error?

We turn, first, to an account of an animal which apparently belonged to this class, which was stranded in the Island of Stronsa, — of the Orkneys, in the year 1808, and which — first seen

entire, measured by respectable individuals, and afterwards, when and broken in pieces by the violence of the waves, was again examined by many; portions of it being secured, such - the skull, and upper bones of the swimming paws, by III Laing, a neighbouring proprietor; and other portions, such in the vertebree, &c., by being deposited and beautifully preserved in the Royal Museum of the University of Edinburgh, was a the Museum of the Royal College of Surgeons. An able paper we these latter fragments, and me the wreck of the animal, was read by the late Dr Barclay to the Wernerian Society, and will be found in vol. i. of its Transactions, to which refer. We can allow space only for wery short abridgment of these documents, which, be it remembered, furnish an account of the animal principally after it had been mutilated; and hence we cannot wonder if the original accounts both imperfect and contradictory. It measured fifty-six feet in length, and twelve in circumference. The small, not being a foot in length, from the first vertebre; the neck selender, extending to the length of fifteen feet. All the agree in assigning it blow-holes, though they differ their precise situation. On the shoulders something like bristly mane commenced, which extended to the extremity of the tail. three pairs of fins or connected with the body; the anterior were the largest, measuring more than four feet in length, and their extremities some-

THE RESERVE OF THE PERSON NAMED IN

what like toes, partially webbed. Probably the sketch is particularly defective respecting these. Dr Fleming, in his notice of this animal, suggests these members were probably the remains of peotoral, ventral, and caudal fins.* The skin smooth, without scales, and of greyish colour; and the flesh appeared like coarse ill-coloured beef. The eye man of the size of the Seal's; the throat too mines to admit the hand. Though man veying probably very imperfect representation of the animal. here supplied above wood-cut of the sketch which taken the time, and which, from the many affidavits proffered by most respectable individuals, as well - from other circumstances narrated, leaves no manner of doubt as to the existence of some such animal.

We shall next allude to the unvarnished account recently given, of a great animal which excited siderable astonishment and alarm among the Western Isles of Scotland. The following extract is taken from a letter of Maclean, the parish minister of Eigg, dated 1809, to Dr Neill, the learned and worthy tary of the Wernerian Society:—"I we the animal of which you enquire in June 1808, on the coast of Coll. Rowing along that coast, I observed, about the distance of half a mile, an object to windward, which gradually excited astonishment. At first view it appeared like a small rock; but, knowing that there was no rock in that situation, I

eyes closely upon it. Then I saw it elevated considerably above the level of the sea, and, after a slow movement, distinctly perceived and of its eyes. Alarmed the unusual appearance and magnitude of the animal, I steered = to be in great distance from the shore. When nearly in a line between it and the shore the monster, directing its head which still continued above water towards us. plunged violently under water. Certain that he in chase of us, we plied hard to get ashere. Just we leapt out a rock, and had taken a station as high as we conveniently could, me it coming rapidly under water towards the stern of our boat. When within a few yards of it, finding the water shallow, it raised its monstrous head above water, and, by a winding course, got, with apparent difficulty, clear of the creek where our boat lay, and where the monster seemed in danger of being embayed. It continued to move off with its head above water, and with the wind for about half a mile, before we lost sight of it. | head | somewhat broad, and of form somewhat oval: its neck what smaller; its shoulders, if I can as term them, considerably broader, and thence it tapered towards the tail, which last it kept pretty low in the water, m that wiew of it could not be taken an distinctly as I wished. It had no that could perceive, and seemed to to move progressively by undulation up and down. | length I believed to be between seventy and eighty feet. When nearest to me it did not raise its wholly above water, so

that the neck being under water, I could perceiv no shining filaments thereon, if it had any. It progressive motion under water I took to be ver rapid. About the time I it, it was the Isle of Canna. The crews of thirteen fishin; boats, I me told, so much terrified ap pearance, that they, in a body, fled from it to the nearest creek for safety. On the passage from Rum to Canna, the crew of one boat and it coming towards them, with the wind, and its head high above water. One of the crew pronounced the head | large | a little boat, and its eye | large | a plate. The men were much terrified, but the monster offered them no molestation." Dr Hibbert mentions that the Great Sea-Serpent has occasionally been recognized in the Shetland Seas; and specifies one which was seen off the Isle Stonness, Vaeley Island, and Dunvosaness.†

We now turn to several instances of the appearance of the Sea-Serpent which have been witnessed the coast of America; and m do m by referring first the Report published by a Committee appointed by the Linnean Society of New-England, collect all the evidence they could obtain on subject. In the month of August 1817, senerally reported that very singular animal of prodigious size had been frequently seen in the Harbour of Gloucester, Cape Ann, about thirty miles from Boston. In general appearance it re-

Islands, p.

^{*} III Trans. of the Wernerian Soc. vol. i. 442.

in m line.

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In the report to which we have referred, the affidavits of a great many individuals of unblemished character me collected which leaves me room apprehend any thing in deceit. They do agree wevery minute particular, but in regard m great length and Snake-like form, they me harmonious. The first person who makes deposition for nearly half hour, the distance of 250 yards. At that distance he could not take in two extremities with glass. The second witness depones, that he observed a strange marine animal, which he believed be Serpent: it continued in sight for an hour and a half, and moved through the water with great rapidity, . the of mile in two, or, at most, three minutes. On occasion he it lying perfectly still, tended us the water, and displaying about fifty feet of m body. The third witness judged in to between eighty and ninety feet in length, with the head formed somewhat like the Rattle-Snake, but nearly as large as that of the horse. At me time ahowed about fifty distinct portions of its body. The fourth witness saw it open its mouth, which appeared that of a Serpent. Another shot his gun loaded with ball at it, at the distance of thirty feet; when he found monster immediately

turned round, if intending to approach him, and passed very was the boat. The tenth deposition we shall give somewhat ____ fully. - On the 20th of June 1815, my boy informed of an unusual appearance un the surface of the mu in the Cove. When I viewed it through the glass, I was in a satisfied that it was seem squatic animal, with the form, motions, and appearance of which I not previously acquainted. quarter of a mile from the shore, and moving with great rapidity to the southward; it appeared almost thirty feet in length. Presently it turned about, it then displayed a greater length, I suppose at least 100 feet. It then towards me very rapidly, and lay entirely still on the surface of the water. His appearance then was like a string of buoys. I me thirty or forty of these protuberances, m hunches, which were about the size of The head appeared six meight feet long. and tapered if to the size of a horse's head. He then appeared about im feet long; the body appeared of m uniform size; the colour deep brown. I could discover any eye, gills, breathing holes: I did not we any fine as lipe." We add, that there was many other depositions equally pointed as to the occurrence of this extraordinary creature, and several letters respecting it; Honourable Lonson Nash, and of the committee of the Linneau Society, and himself = eye-witness, another addressed by clergyman Judge Davis, the president of the society. General Humphreys, by whom the affidavits taken, transmitted copy of them, and a detail of the whole circumstances, to the late Sir Joseph Banks, in whose library the documents still preserved.

An animal of similar appearance was again in August 1819, off Nahant, Boston, which remained in the neighbourhood for weeks. When first seen, it was stationary for four hours the shore, and two hundred persons assembled to view it. Thirteen folds counted, and the head, which Serpent-shaped, alevated two feet above the surface. Its eye - remarkably brilliant and glistening. The water smooth, and the weather calm and serene. When it disappeared, its motion undulatory, making curves perpendicular to the surface of the water, and giving the appearance of a long moving string of corks. The last notice we have and of this American animal bears date July 1833. The Boston and New-York papers of that date state, that the Sea-Serpent had again appeared off Nahant. "It must first must on Saturday afternoon, passing between Egg Rock and the Promontory, winding his way into Lynn Harbour, and again on Sunday morning, heading for South Shores. He by forty or fifty ladies and gentlemen, who insist that they could not have been deceived."

In connection with the animal thus seen in America, we must not omit the authentic account of previously undescribed species of Serpent, which has a striking resemblance of the features

to the apocryphal animal which dwelling. The Boston Society of Natural History has the merit of having first brought this Serpent under the notice of Zoologists, and the committee who described it unhesitatingly regarded it a specimen of one of the young of the Great Sea-Serpent. It was seen and killed in September 1817, near Sandy Bay, between a salt lake and the sea, at great distance from the shore, and me speedily brought to Boston for the examination of the Society. It was a yard long all but half an inch. The contour of the back exhibited its most singular feature, for here me found a waving line, produced by series of permanent risings, which commenced near the head, and extended, almost without interruption, to the tail, their total number being forty. The body could be bent with the greatest facility in the vertical direction, especially at the undulations. but not without great difficulty latterly. The Society applied to this animal the name of Scoliophis Atlanticus, of which, at the conclusion of this chapter, we subjoin representation. III de Blainville, in analyzing the various documents which have been published concerning this Serpent, remarks—" That ■ new species of Serpent has been discovered in America, which is really very singular, especially it regards its vertebral column, ribs, and mode of progression, appears certain; but that this small Serpent is precisely of the man species on the great marine animal which has appeared off the coast, and whose

existence we scarcely deny, is very doubtful."*

But long before the Great Sca-Serpent was ever suspected of being a visitor of the British Isles, or of the New World, it was regarded as a well known member of the Fauna of Scandinavia. In this nection, will not omit the unquestionably exaggerated statements of the bonest missionary, Hans Egede, concerning what he tells us he himself witnessed off the coast of Greenland in the year 1734. After speaking of the Mermaid, &c., he adds-"None of these by us, nor by any of our time that I could hear, - that most dreadful monster which showed itself - the surface of the water off our colony, in 64° north latitude. This monster was of so huge a size, that, coming out of the water, its head reached as high as the main mast; its body was - bulky as the ship, and three m four times m long. It had a long pointed snout, and spouted me whale fish; it had great broad paws; the body seemed covered with shell work, and the skin was very rugged and me The under part of its body shaped like an enormous huge Serpent; and when it dived again under water, it plunged backwards into the sea, and so raised its tail aloft, which seemed a whole ship's length distant from the bulkiest part of its body." In the History of Greenland, author again speaks of this animal, and informs us that Mr Bing,

Journal Physique, t. hexevi. p.
 Nat., Hist., of Greenland, p. 86.

another of the missionaries, took a drawing of it. This we have copied on our plate....(See Plate XXVIII.)

Finally, we subjoin the accounts, older and more recent, given of this animal in what may be called its native retreats. We shall begin with a short abridgment of the information supplied in Pontoppidon's Natural History of Norway :- "Our coast," says the learned bishop, "is the only place in Europe visited by this terrible creature. This makes many persons who me enemies to credulity entertain doubts about it. I have questioned mexistence myself, that suspicion was removed by full and sufficient evidence from creditable and experienced fishermen and sailors, of which there are hundreds who can testify they have annually seen them. All these persons agree very well in the general description. In all my inquiries, I have scarcely spoken to any intelligent person who me able to give strong of the existence of this fish; and of traders think it a very strange question when they we seriously asked whether there be such creature; they think it m ridiculous, as if the question put to them whether there be such fish Cod or Eel." After this, a long letter is supplied from Captain L. de Ferry, who was in his boat, with a crew of eight men, when they a Sea-Serpent, which he fired at and wounded. His description very much agrees with that already given, and every particular authenticated by the affidavits of two of crew. We also informed that

Governor Berestrap states, that he saw a similar animal a few years before, and drew a sketch of it. Mr Hans Strom, clergyman, also caused a sketch to be made of one which ____ under his inspection. and other eye-witnesses are named. The bishop concludes. " I might mention, to the same purpose, many more persons of equal credit and reputation." But we must bring these statements of Pontoppidon to a close with me other short quotation. " Though it is difficult to ascertain its exact dimensions, yet all who have it unanimous in affirming that it appears to be about feet long; that it lies in the water in many folds, and there appears like so many hogsheads floating in m line, at m considerable distance from each other." - (Plate XXIX. is a copy of Pontoppidon's representation.)

Again, Sir A. de Capell Brooke makes allusion to this animal in his "Travels in Norway." He states that he did not witness in himself, but that the fishermen of Sejerstad stated it in 1818 in the Folden fiord. In July 1819, it made its appearance off Otersun in Norway, and Captain Schilderup stated to Sir Arthur that it was seen daily during the whole month, and continued while the weather lasted, as if dozing in the sun-beams. When Captain S. first saw it, he was in a boat at the distance of about 200 yards, and supposes its length to have been about 600 feet. The Bishop of Nordland had men two of them about eight miles from

Loc. cit. ii. 195.

Drontheim; he may not far from them, and considered the largest to be about 100 feet. Again, in 1822, and of these creatures, reported to be bulky a large ox, and about a fourth of English mile in length, made its appearance off the island of Soröe, near Tinmask, and see seen by many of the islanders.

The most recent account of this monster we have noticed, appeared in the public newspapers of Drontheim, in the autumn of 1837, and we confess we cannot regard it = a sheer fabrication :- "The Adis of this city contains an account from Tozen of the end of August, which it says - communicated to the editor by a very enlightened and principled man, - that it merits attention, - tending to remove the doubt respecting the existence of the Sea-Serpent. The account says, that since the beginning of the dog-days, the Serpent has been seen at various parts of the coast of that district. One of them to have remained constantly during this summer Storfosen, at the Kergyang Islands. Several fishermen have been u dreadfully alarmed the sudden appearance of the Serpent mear their boats, that they did not know in what direction to escape. The Serpent did not attack, but followed the boat for distance, and the men in their haste so over-exerted themselves, that two were confined to their beds. Very credible persons affirm that the length of the Sea-Serpent may be taken at 600 = 800 ells, perhaps more, for when these people mear its head, they could not discarn its tail. Its greatest thickness is close the head. These observations made very clearly within these few days, amongst others, by a credible, sensible man, who, with his two sons, on our island where they landed, and where the Serpent, after following their boat, swam slowly by."

With these extracts, and without farther comment, we close our account of the Great Sea-Serpent, only remarking, that till favouring eircamstances bring the animal under the examination of Naturalists, the satisfaction, which is desiderated respecting it, is scarcely to be expected.



THE KRAKEN .- PONTOPPIDOR.

Kraken, Kraxen, Krabben, and Horven, Ancker-Trold, Olaus, Wormins, Postoppidos.—Scandinavian Writers.

WE now proceed to make | few remarks upon the other sea monster to which we alluded in the Introduction of this volume, viz. the Kraken, which, of all other reputed animals, is perhaps the most involved in mystery and obscurity. Though regarded by Olaus, Wormius, and other early writers, as a species of Whale, there seems to be m good ground for this opinion. The statements of the Ancients concerning this animal are meraggerated, that me will not try the patience of me readers by copying them, but me example merely we quote that of Pliny:-- "In Gaditano oceana arbor est, in tantum vastis dispensa ramis, ut man fritum nunquam intrasse credatur."* The belief in this ster is, however, universal among the sailors and fishermen of the Norwegian coast, and it has been alluded to by all the Scandinavian writers from the

⁴ Lib. ix. cap. 4.

earliest period down to the present day. We may best, perhaps, give a general idea of this famous animal, by abridging the account supplied by the learned Pontoppidon, who remarks it is incontestably the largest monster in the world:-" Our fishermen usually affirm," says be, "that when they out several miles to sea, particularly in hot days, they are informed, by various circumstances, that the Kraken is at the bottom of the Sometimes twenty beats get together over him; and when, from well known indications, they perceive it is rising, they get away m fast they can. When they find themselves out of danger, they lie upon their oars, and in a few minutes they see the monster come to the surface. He there shows himself sufficiently, though only a small part of his body appears. Its back, which appears to be a mile and ■ half in circumference, looks at first like a number of small islands, surrounded with something which floats like sea-weeds; here and there a larger rising is observed like sandy banks; at last several bright points or horns appear, which grow thicker the higher they rise, and sometimes they stand up m high, and m large, m the masts of middle-sized vessels. eeems these are the ture's arms, and it is said that if they were to lay hold of the largest man-of-war, they would pull it down to the bottom. After the monster has been a short time - the surface of the water, he begins slowly to sink again; and then the danger is great before, because the motion of the sinking

causes such a swell, and such an eddy and whirlpool, that he carries every thing down with it."*

It is a favourite notion of Pontoppidon, that from the appearance of the Kraken originate those traditions of floating islands being so frequently observed in the North Sea. Thus Debes, in his Feroa Reserata, alludes to certain islands which suddenly appeared, and suddenly vanished. Similar accounts may be found in Harpelius and Torfæus. These islands are looked upon by the common people the habitation of evil spirits, but probably occasioned by the appearance of this great sea animal. "We ought not," says Pontoppidon, "to charge the evil spirit without a cause. I think the making and unmaking of these floating islands is nothing else but the Kraken, which some sea-faring people call Soe-trolden, i.e. mischief. What confirms me in this opinion is the following occurrence, quoted by the worthy Swedish physician, Urban Hierne, from Baron Grippenheim. Among the rocks about Stockholm there is cometimes man a certain tract of land, which at other times disappears, and is again men in another place. Burmus bas placed this min island in his map. The peasay it is not always seen, and that it lies in the open sea, but I could not find it. On Sunday I saw something like three points of land in the which surprised Upon this I went to enquire of peasant, but our return we could see nothing

Pontoppidon's Nat, Hist. of Norway, vol. ii. p. 211.

of it. Now, says the Bishop, who is it that cannot discover that this visible invisible island is thing else than the Kraken improperly placed in the map by Burseus? Probably the creature keeps himself always about that spot, and often rises about the rocks and cliffs."

At first view this account searcely be regarded in any other light than that of table, and yet probably without much difficulty this extraordinary Kraken may be identified with certain species of Sepia, or Cuttle-fish, which have been described in the Annals of Science. Mr Pennant, in his description of the Eight Armed Cuttle-fish, mentions-" That in the Indian Seas this species has been found of such size as to twelve feet in breadth across the central part, while each arm was fifty-four feet in length, thus making a extend from point to point about 120 feet. He further states that the natives of the Indian Isles, when sailing in their canoes, always take men to be provided with hatchets, in order immediately to cut off the most of such of these animals as happen to fling them over the sides of the canoe, lest they should pull it under water and sink it." The opinion of Dr Shaw is equally decided regarding the occurrence of this animal. "The existence of some enormously large species of the Cuttle-fish tribe in the Indian Northern Seas hardly be doubted; and though accounts may have been much exaggerated, yet there is sufficient for believing that such species may very far surpass all that are generally observed

about the coasts of European Seas. A modern Naturalist chooses to distinguish this tremendous species by the title of the Colossal Cuttle-fish, and seems amply disposed to believe all that has been related of its ravages. A Northern navigator, of the grant of Dens, is said, grant years ago, to have lost three of his me in the African Seas by monster of this kind, which unexpectedly made its appearance while these men were employed, during a calm, in raking the sides of the vessel. The Colossal-fish seized three min its arms, and drew them under water, in spite of every effort to preserve them: the thickness of of the arms, which cut off in the contest, that of a mizzen-mast, and the suckers of the size of potlids."*

But the most zealous author who treats of this animal is undoubtedly Denys Montfort. In his work on the Natural History of the Mollusca there are many instances mentioned of its occurrence in various parts of the world, the particulars of which he was so fortunate in to procure from those who man eye-witnesses of what he relates. He gives in detail the circumstances above alluded to by Dr Shaw from the account as supplied by Dens himself; and, among other instances, he mentions that Malo, in the chapel of St Thomas, there is an voto, picture deposited there by the of a vessel, in remembrance of their wonderful preservation during

^{*} Shaw's Lectures, vol. ii. p. 137.

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a similar attack off the coast of Angola.—(See Plate XXX.) An Cuttle-fish suddenly threw its the vessel, and was on the point of dragging it to the bottom, when the continued efforts of the swords and hatchets. During the period of their great-danger, they invoked the aid of St Thomas, and being successful in freeing themselves from their dreadful opponent, on their return home they went in procession to the chapel, and offered up their thanksgivings. They also procured a painter to represent, as accurately as possible, their encounter, and the danger which at the moment threatened the termination of their existence.

Nor have later times failed in supplying additional testimonies to the existence of this animal, quite as decided, but unfortunately not more satisfactory. The last of these notices we have seen bears date 1834, and is conched in the following terms: — Upon the 22d of June, in lat. 46° 57′, long. 58° 39′, Captain Neill, of the ship Robertson of Greenock, then upon a voyage from Montrose to Greenock, then upon the beautiful to the the time. It then upon the total the total to the total total to the total total total to the total tota

Meg. of Zool. and Bot. vol. i. 414.

twelve meet got abreast of it, distant about m mile to leeward. On observation at this time it discovered to be the head and snout of a great fish swimming to windward; and though attempt made to get closer, it could not be accomplished. because the fish, without much apparent exertion, kept swimming as fast as the vessel sailed. Immediately above the water its eye was seen like a large deep hole. That part of the head which above the water measured about twelve feet, and its breadth or width twenty-five feet. The snout trunk about fifty feet long, and the sea occasionally rippled over part, leaving other parts quite dry and uncovered. The colour of the parts seen green with a light and dark shade; and the skin was ribbed, as represented in the sketch the close of this article.

Sol ewhat more than fifty years ago, much wonder excited throughout Scotland, and more epecially its Eastern coasts, by the alleged appearance of the Kraken in great distance from the shore. Connected with this, notice will be found in the second volume of the Transactions of the Royal Society of Edinburgh, in form of a letter read to that learned body from the late John R. L'Amy, Esq., one of the justices of the peace for the county of Forfar, and Mr John Guild, one of the magistrates of Dundee, including an affidavit made before them by the master and mate of a Norwegian ship. According to these respectable individuals, the supposed Kraken in on Sunday,

August 5, 1786, off the coast of Scotland, about fifteen leagues to the eastward, in lat. 56° 16°. In appearance it resembled three low islands, or sandbanks, of a greyish colour, within less than a mile's distance from the ship; and it appeared to extend about three miles from one extremity to the other. It remained in sight about fifty minutes, and upon the springing up of a breeze it gradually sunk under the water. The illusion or exaggeration in this instance must here be very great, and would almost lead us to agree with the remark made in the Society's Transactions, that the account is perfectly consistent with the idea of this being nothing more than a fog-bank, of which the appearance is familiar to mariners.*

A similar incident is mentioned by Dr Hibbert as having occurred in Shetland. "A few years since," he states, "an affidavit was taken by a justice of the peace in Shetland relative to this monster, which was seen at a distance from the shore off the Island of Burra. It appeared, according to the declaration of these witnesses, like the hull of a large ship, but, on approaching it nearer, they saw it was infinitely larger, and resembled the back of a monster." It is also said that part of the remains of a dead Kraken were found about seventy years ago driven to the mouth of a large cave in the Island of Meikle Roe. We learn, likewise, from Pontoppidon, that Mr Friis, minister of Bodeon in

[·] Edin, Phil. Trans. vol. ii. 16.

Nordland, records that one of these creatures was stranded among the rocks in the year 1680: the carcass was a long time in decaying; it filled up a great part of the Narrow Channel, and made it almost impassible on account of its intolerable stench.

We must now terminate our account of this extraordinary animal, and shall do so in the words of a distinguished Naturalist, who, with great ability. has illustrated the subject, and whose able paper we recommend to the attention of our readers.* "The different authorities we have quoted are, we trust, sufficient to establish the existence of an enormous inhabitant of the deep, (the Cuttle fish,) possessed of characters which, in a remarkable degree, distinguish it from every other creature with which we are familiar; and the agreement which may be observed in its descriptions, when compared with those of the celebrated Kraken, is sufficiently obvious to warrant the inference which we are now prepared to draw. That the great Norwegian animal thus named is to be considered not as a wild and groundless chimera, but as either identical with, or nearly allied to, this colossal cuttlefish. It must be confessed that many of the accounts to which we have referred, if considered singly, are much too vague and indefinite to form the foundation of any opinion; but it is the general import and tendency of the whole combined which should be considered. In this view, it would be

^{*} Blackwood's Mag. vol. ic. and iii.